1941 File No. 5920/39 I

Agriculture & Rural Development

~~REVENUE~~ DEPARTMENT

A Class. AGRE. & RURAL DEV.

B ~~A~~ ~~A~~ BRANCH

Subject :— ~~Scheme~~ Cotton for Improvement of Dharwar-American —.

Scheme for botanical research towards improvement of,

A Class

CLOSED RECORD

K

P=144

E

A Class

File No. 5920/39 X J B 7

G. R., C. D., No. 2101, dated 22-6-22.] Sectt. 78A c.

DOCKET SHEET (B)

Subject :—

File

DEPT.

BRANCH.

References : –

Date.	To whom sent.	Notes and instructions.
17/11/57	Regn.	Pl await (17/1/58)
~~[illegible]~~	~~Regn~~	~~Pl file~~
29/2	Regy	Pl file

G. R., G. D., No. 2408, dated 22-6-22.]

Std. Sectt. 78 e.

DOCKET SHEET

Subject :—

File No. 5920/39

REVENUE **DEPT.**

AGRE. & RURAL DEV.

BRANCH.

References :—

Date.	To whom sent.	Notes and instructions.
3/6/41	AGr	
16/6/41	Reg	Issue [illegible] 21.6.41
Reg 16/6		
17/6	Reg	Return to RD
24/6/41	–	M. issue letter & return to (M. exports on 10/7/41)
7/8/41	Reg	Await till 1.11.41
8.12.41	Reg	Issue no. to R.D. and bring to notice on 8.1.42
15/12	Regy.	Pl. return to R.D.
8/4/42	Reg	Issue. In GR section with copies (Rand)
		(Print G.R. very urgently)
		& G.R. sent to Press.
		& Proof returned.
28/4/42	Regy.	M. issue no. to RD (28/5/42)
30-4-42	Regy	Pl. issue nos to R.D.

5.62	Regy	Pl. issue memo. & await till 1-8-62
20/6/42	Ry	file cl B
8/7/42	Ry	V. Ry. In use GFD memo after 4 days
9.42	Regy	Pl. return no.
12/9	Ry	V. Ry. In letter sent return into copy
17/9		Await till 15th [illegible]
20/4/43	Ry	file
5/43	"	Pl. issue memo. immediately (F.C. put up) and
6/43	"	file "B" class
6-44	Registry	Pl issue f.c. of memo (p 122/88)
5-44	Registry	Pl file CC (B)
5-45	Ry	Pl. issue endt (F.S.) with accts. and [illegible]
1.48	Regy	Pl. issue Memo (p. 185) (a copy of the I.C.C.C's letter to be [illegible] before issue)
17/1	Ry	Await file
9-49	"	Pl and till 20-10-49
11-49	"	Pl and till 20-12-49
49	"	Pl. await till 1-1-50
50	Regy.	Pl. issue G.L. and return to Br.
50	Regy.	Pl. await till 25.2.50
50	Regy.	Pl. issue G.L. & return to Br.
50	Regy.	Pl. await till 20.4.50
50	Regy.	Pl. await till 15-5-50
50	Regy.	Pl. file
5-51	Regy.	Pl. issue endt. and return

25/7/51
Regy: Pl file

Urgent

REVENUE DEPARTMENT
File No. 5920/39
3-JUN 1941
Serial No. A 14157

From

W.J.Jenkins,Esquire,M.A.,B.Sc.,C.I.E.,I.A.S.,
Director of Agriculture,
Province of Bombay, Poona,

To,

The Secretary to Government,
Revenue Department, Bombay.

Poona, 31st May, 1941

Subject:- Scheme for botanical research work towards the improvement of Dharwar-American Cotton.

Sir,

I have the honour to submit herewith a scheme and estimates for further botanical research work on the improvement of the Dharwar-American (Hirsutum) cotton crop which is grown in the Kannada districts of the Bombay Province and, to a small extent, in adjoining portions of Madras Province and in Hyderabad and Mysore States. The present area under this crop in Bombay Province is approximately 2,00,000 acres with an additional 1,00,000 acres in the adjoining territories mentioned above.

(2) Previous work on the improvement of this variety of cotton resulted in 1914, in the isolation of the superior type Gadag No. 1 which gave, on an average, 26% more lint than the original Dharwar-American crop and which, in addition, possessed a longer staple and obtained a premium of about Rs 20/- per candy over the unimproved crop. This improved type is now being widely multiplied and distributed in the Kannada districts, suitable for the cultivation of American cotton, under the Jayawant and Gadag No.1 Seed Multiplication and Distribution Scheme financed partly by the Indian Central Cotton Committee and partly by the Government of Bombay.

(3) Gadag No. 1 has two serious disadvantages viz: its susceptibility to "red leaf" blight and its lateness in maturity and the Cotton Breeder, Southern Maratha Country, has been endeavouring for some considerable time to evolve a type of Hirsutum cotton which will be superior to Gadag No. 1 in staple and ginning percentage and which, in addition, will be more resistant to "red leaf" blight and will

be earlier in maturing. This work has been undertaken at the Government Farm, Dharwar and promising material has been obtained, especially as a result of hybridization between the varieties Gadag No. 1 and Co.II. It has been found, however, that Dharwar Farm, which is not in the area where Hirsutum cottons are grown, is unsuitable climatically and environmentally for such scientific work and that, if future progress is to be made within a reason--able time, this work must be moved to an area e.g. Gadag, where conditions of soil, climate, rainfall etc: are suited for the cultivation of Hirsutum cottons and where this species of cotton is already being widely cultivated.

Accordingly this scheme for the establishment of a centre for botanical work on Dharwar American cottons at Gadag is submitted to Government with a request that it be submitted to the Indian Central Cotton Committee for approval and financial assistance. The cost of the scheme over a 5 year period is Rs 16,640 of which Rs 15,765 represents recurring expenditure and Rs 875 non-recurring expenditure. Estimated receipts over the same period are Rs 1500. The details of this expenditure are shown in the Budget estimates in para 14 of the scheme attached. The work at the new centre at Gadag will be supervised by the Cotton Breeder, S.M.C., Dharwar, who will be provided with a small technical staff of one graduate assistant and one counter at the Gadag Sub--station.

) I have the honour to recommend the scheme strongly as it is now clear that further advance in the botanical improvement of the Dharwar American crop cannot be obtained so long as that work is undertaken at Dharwar i.e. in an area which is unsuited for the successful growth of this variety of cotton and to request that the scheme be sub--mitted to the Indian Central Cotton Committee at once so that it can be considered at the next meeting of the Committee to be held in July 1941. Form A, laid down by the Indian Central Cotton Committee to accompany all

proposals for new cotton breeding schemes submitted to it for consideration, has been duly completed and is attached to the Scheme. It is requested that the Government of Bombay, if they approve of the Scheme, may be asked to forward it early to the Indian Central Cotton Committee with the request that, as it is a new botanical research scheme, the Committee may be pleased to sanction the expenditure proposed over the five year period i.e. Rs.16,640/-, in full in accordance with the decision arrived at by the Committee regarding the allocation and distri--bution of expenditure on Schemes financed wholly or partly by that body at its meeting on the 2nd March, 1937 e.g. research schemes should be financed upto a period of ten years in full subject to review at the end of 3rd,5th and 8th year as at present.

I have the honour tobe,

Sir,

Your most obedient servant,

Director of Agriculture.

gvm 29/5

the Improvement of Dharwar-American Cotton.

Introduction.

(1) The successful introduction of American Cotton in the Gadag tract of the Bombay Province dates back for a long period. In the month of August 1842, Mr.A.N.Shaw, the then Collector of Dharwar, tried American cottons on 10 acres of land near Hubli, under the local system of culti--vation. The results of these trials are tabulated below*:-

Area in Gunthas.	Name of the Cotton.	Yield per acre. Kapas lbs.	Yield per acre. Lint. lbs.	Ginning percentage
10	New Orleans.	286	88	33.3
10	Local (Kumta)	196	44	24.8

(2) The results being encouraging, a special officer was appointed to supervise American cotton experiments conducted at Kusugal in the Hubli Taluka and, in the year 1843, six varieties were planted on 183 acres. The results were in favour of the New Orleans variety on account of its superior yielding capacity and the area under this variety rose to 2749 acres in 1844. As an outcome of these results a second Farm was started at Gadag in 1844 under the super--vision of Mr.Hewley to conduct further cotton experiments. Here the experiments were more successful than those at Kusugal, owing to the crop being healthier than that at Kusugal where it had been badly attacked by insect pests. In the year 1845, it was decided to multiply the New Orleans cotton variety in cultivators' field and the area rose to 22331 acres in 1846. Thus the early efforts to introduce American cottons were singularly successful. The area went on steadily increasing, reaching the figure of 1,78,682 acres in 1861, an area almost equal to that under local cotton. The quality of the cotton was also found to be satisfactory.

(3) The New Orleans cotton t introduced and

*Bulletin No.106 of 1920 Bombay Dep of Agriculture

acclimatised in Dharwar district was called Dharwar-American and is locally known under the various names of "Vilayati Hatti" (English-cotton), "Firangi Hatti" (foreign cotton) and "Dodda Hatti" (Big seed cotton). Its cultivation is now practically confined to a small tract of the Bombay Karnatak (206432 acres in 1938-39), extending to a limited extent into the Nizam's Dominions, Madras Province and Mysore State(approximate area one lakh of acres).

(4) The cotton crop grown in the Karnatak is semi--rabi, but there is a small area in Dharwar District(in Haveri and Ranebennur talukas) where Dharwar-American cotton is grown both in the kharif and rabi seasons (nearly 1,09,500 acres).

Attempts made to improve the Dharwar-American cotton.

(5) With the re-organisation of the Department of Agriculture in the year 1904,an experimental farm was opened at Dharwar and a number of American, Egyptian and Sea-Island cotton varieties were obtained from many countries and put under trial at Dharwar. This work continued for three years during which period it was found that the conditions of Dharwar were unsuited for all American cottons including Dharwar-American, as they suffered seriously from the attack of "red leaf-blight". Hence, in 1908, a farm was started at Gadag, the centre of the Dharwar-American cotton tract, for future work on the improvement of American cottons. A number of crosses were made and tried at Gadag.

(6) That the Dharwar-American cotton was not pure was noticed for the first time in 1909 when green and white seeds were separated and grown to test their value. In 1910, unit selection work was started and after a careful study of the various morphological features and resistance to "red-leaf-blight", a type known as Gadag No.I, possessing many desirable characters, was isolated in
This cotton gave, on an average, 26 per

acre than Dharwar-American. The staple was longer by 1/8th of an inch and the cotton fetched a premium of Rs.20/- per candy over the current price of Dharwar-American. As a result of these improvements, the seed of Gadag No.1 is now being multiplied and distributed in the district.

(7) Though these results can be said to be encouraging the limit of improvement for this tract has not been reached and Gadag I has recently been found to possess the following serious defects.

1. Its susceptibility to red-leaf-blight.
2. Its lateness in boll-formation.

The Problem.

(8) The problem, therefore, consists in investigat the possibility of the evolution of a type of Hirsutum con superior to Gadag No.I in staple, "red-leaf" resistance a ginning percentage, and which, in addition, will be defin -ly earlier than that improved variety. At present, pro -ing material is available in the crosses of Gadag I wi Co.II which have now reached the 6th generation. The s of selection, though not complete, offers promise of appreciable improvement. This work is being underta the Dharwar Farm, but, as environmental conditions Dharwar are not at all suited for the growth of Hirsu cottons, it is necessary to shift the work to Gg Such work i.e. on the improvement of Dharwar-America cottons can only be done effectively at Gadag - and a Dharwar - for the following reasons:-

(i) The Dharwar-American cotton requires less less humidity and higher temperatures than those ex at Dharwar. These conditions are prevalent at Gada The high rainfall and humidity at Dharwar are pre-disp causes for the severe attack of "red-leaf-blight" which affects the yield considerably and hence Dharwar condi are un-congenial for the favourable growth of American cotton. The isolation of the present Gadag I cotton made possible, owing to the existence of Gadag Farm fo

period of 15 years (1906-1920) and the fact that the [illegible] plot has been maintained for stages I and II of the seed multiplication scheme till today is in itself a proof of the suitable conditions prevalent at Gadag for the growth of Dharwar-American cottons.

(ii) Again, the work of hybridising Gadag I x Sea Island cotton, tried at Dharwar (1923-1930) with a view to evolve a type superior to Gadag I, proved abortive. Had the work been carried out at Gadag, some tangible results would possibly have been obtained.

(9) The following five-years scheme is proposed in order to carry out efficiently the work of further improvement in Dharwar-American cotton.

The Scheme.

(10) At present, an area of 50 acres belonging to a local cultivator has been taken at Gadag and is being utilised for the multiplication of Gadag I seed, 25 acres being under cotton and the remaining area being under such rotation crops as jowar, groundnut, wheat, gram and saf--flower. In addition to the multiplication of Gadag No.I seed, a quantity of 200 lbs. selfed seed is produced every year on this area as a nucleus of pure seed. It is now proposed to extend this area by 8 acres (4 acres under cotton and 4 acres under rotation crops) in order to carry out the following botanical research work.

(a) The testing of segregates of G1 X Co II in pure line cultures and the study of about 100 plants with a view to select a desirable type suited to the tract.

(b) The trial of promising strains in randomised blocks and in replicated progeny row-test.

(c) The trial of the progeny of interspecific hybrids and back crosses done at Surat Farm, with a view to obtain suitable types, as Gadag is most favourably situated for the trial of these cottons.

cultivators in the Southern Maratha Country, but also those in the adjoining tracts of Mysore and Deccan Hyderabad, if promising strains obtaining a high premium are evolved. Gadag I, a selection from Dharwar-American, brings in Rs.3/- per acre more than the local. The promising segregate 9-7-6-6 of G I x Co II cross is sure to pay a higher premium than Gadag I. The following statement shows the present area, approximate area likely to be covered by improved types superior to Gadag I and the extra premium over the local that is most likely to accrue to the cultivators:-

Statement showing area and increased benefit to the cultivators.

The improved cotton.	Present area grown (acres).	Approximate area to be covered by improved types.	Increased area over the pre-sent.	Extra money return per acre.	Extra mone return (yearly) by the improved cottons.
ag - I. - Karnatak ad States.	1,28,340 -	2,50,000 25,000	1,46,660	Rs.3/-	Rs. 4,40,000 nearly
	Total	2,75,000			

(12) A copy of Form A, which the Indian Central Cotton Committee has decided should accompany all proposals for new cotton breeding schemes and which gives full details of the present position of cotton cultivation in the tract concerned etc. is attached.

Staff required.

(13) For the conduct of the above work, the staff required is as under:-

(i) One Graduate Assistant in the grade of Rs.110-8-150- It is proposed to appoint a sufficiently senior departmental hand for the work, which will require plant-breeding experience.

(ii) One Counter in the grade of Rs.20-1-30. In addition, one Kamgar has been proposed in the revised Gadag I seed distribution scheme for the Gadag Plot for multiplica-tion stages I & II and it is proposed to utilise his services for this work as well.

~~(13)~~ The work of the Scheme will be under the general supervision and control of the Cotton Breeder, Dharwar.

(14) BUDGET.

Budget estimates of expenditure.
Gadag Station.

A - Recurring.

Items	1st year.	2nd year.	3rd year.	4th year.	5th year.	Total	Remarks.
I. Pay of Establishment.	Rs	Rs	Rs	Rs	Rs	Rs	
Agril:Overseer @ Rs.110-8-150.	1320	1416	1512	1608	1704	7560	
Counter @ Rs.20-1-30.	240	252	264	276	288	1320	
One peon @ Rs.15/-	180	180	180	180	180	900	
Leave salary.	35	36	37	38	39	185	The Agril:Over--seer,as proposed will be a depart--mental man and hence no provi--sion of leave salary and Provi--dent Fund is made for him.
Provident Fund.			NIL				
Total	1775	1884	1993	2102	2211	9965	
II. Travelling Allowance.							
Of the staff.	50	50	50	50	50	250	
Contingency.							
Office rent @ Rs.15/- p.m.	180	180	180	180	180	900	
Office expenses and Miscellaneous.	150	150	150	150	150	750	
Extension of fence and shed.	50	50	50	50	50	250	
Pay of monthly labour Rs.15/- p.m.	180	180	180	180	180	900	
Cultivation charges Rs.20/- per acre for 8 acres.	160	160	160	160	160	800	
Upkeep of livestock.	360	360	360	360	360	1800	
Service postage and telegrams.	30	30	30	30	30	150	
Total contingency.	1110	1110	1110	1110	1110	5550	
Grand total.	2935	3044	3153	3262	3371	15765	

B - Non-recurring Expenditure.

Implements.

Two iron ploughs.....	100/-
Wooden ploughs, harrows, seed drill, intercultures, levelling plank etc.....	50/-
Cart.....	100/-
Pair of bullocks.....	300/-
Office equipment.....	150/-
Fencing expenses for 8 acres.....	100/-
Unforeseen expenses (balance etc.).....	75/-
Total	875/-

Total recurring.....	Rs. 15,765/-
Total non-recurring.....	Rs. 875/-
Grand total.	Rs. 16,640/-

C. Estimated Receipts during five years.

The receipts will be about @ Rs.300/- per year, for 5 years.....	1,500/-

ntv.21.5.41.

moisture in the early stages of growth, the crop suffers from red-lea
The easterly winds of December and January are also predisposing caus
forcing the crop to early maturity.

(ii) Methods of control or evasion usually adopted to combat adverse climatic and soil conditions.

In such cases, the crop ~~xxxxxx~~ sheds buds, flowers and bolls.
There are no known methods of controlling such adverse climatic condi
If westerly winds prevail in the latter part of January or early in F
crop improves to a great extent & puts forth new vegetative growth. The attack of

12. Names of major local insect pests and diseases:- Aptus, Jassids. Red-Leaf blight. blight and aphis is also minimis

(i) Rough estimate of the damage caused on each :- The damage in the case of Aptus or Jassid attack does not excee cent. Whereas the extent of damage from red-leaf blight ranges 20 to 30 percent.

(ii) Susceptibility or resistance of the types :- Gadag I resists red-leaf blight, better than Dharwar American.

(iii) Medhods of control usually adopted in the tract, if any :- The isolation of a red-leaf resistant strain is the only method controlling this disease.

(13. Any other notable features of the tract or of the commercial types. The type Gadag I is now being distributed on an area of about 1 of acres in Gadag and Ron Talukas of Dharwar District and is li cover about 2 lakhs of acres during the proposed extension peri

14. Name of commercial type to be improved (Give botanical name according to latest classification). Gadag I (Gossypium hirsutum L.)

15. Source c

Gadag I was a selection from Dharwar-American. For further work proposed to utilise the following materials.:-

(a) Promising segregates of the cross between Gadag I and Co2.
(b) The progeny of inter-specific hybrids and back crosses done Surat Farm.

APPENDIX I.

FORM A.

To accompany proposals for new breeding schemes (Dharwar-American & Gadag I Cotton). year 1941-42.

Province or State :- B o m b a y Province.

Districts concerned :- Dharwar District including the following places of the States :- (a) Shirhatti (Sangli) (b) Lakshmeshwar (Miraj Junior) (c) Gudgeri (Sangli).

Total Cotton Area :-	Gadag I	Dharwar-American
(i) Average of last 10 years	99000	Not available.
(ii) last year (1940-41).	1,81480	

Names of the commercial types of the tract and whether grown singly or mixed.

Names of Commercial types.	
1	2
Gadag I :- An improved type over Dharwar American; Grown singly.	Dharwar-American :- Grown singly ~~and~~ in the majority of cases; rarely grown along with chillies.

Average acre yields in lbs. last 10 years :- Gadag No. I 220 lbs. seed-cotton (average of 8 years).
Dharwar-American :- 207 lbs seed-cotton (average 8 years).

Average staple length of commercial type, also limits of variation.	Gadag No.I.	Dharwar-American.
	Medium staple. Average 7/8" Limits of variation 28" to 30" (32nd inch)	Short-staple. (Below 7/8" & over 5/8") Limits of variation: 21" to 26" (32nd inch)

Average ginning percentage, also limits of variation :- Gadag I :- Average 33 (range 32 to 34). Dharwar-American :- Average 31 (range 30 to 32

Spinning value : approximate Maximum Yarp Counts:. Gadag I. :- 30's. Dharwar-American :- 18's.

Approximate commercial value lint in Rupees "ON" or "OFF" per candy compared with any recognised standard type. Gadag I fetches a premium of 50 to 70 Rupees "ON" Broach and Rs.20 to Rs.25 "ON" Dharwar-American.

Peculiarities of the tract :-
(i) Usual period of sowing :- The Cotton is sown as semi-rabi; the Kharif rains are scanty and precarious.
(ii) Usual period of picking :- 2nd & 3rd week of September. 2nd week of February to end of March.
(iii) Annual average rainfall - Total and monthly distribution during cotton season. 25"-18 Cents. (average of 4 years). September:- 5"-51 Cents. October:- 3"-82 Cents. November:- 1"-67 cents. December :- 0-13 Cents. Total :- 11"- 13 Cents. (average of 4 years).

(i) A brief account of the behaviour of Gadag I cotton:

The Director of Agriculture has submitted a scheme for further botanical research work on the improvement of Dharwar-American (Hirsutum) Cotton. The scheme is estimated to cost Rs.16,640 (Rs.15,765 recurring and Rs.875 non-recurring) spread over a period of five years. Against this, receipts to the extent of Rs.1,500 are estimated to accrue from the scheme during the period. The expenditure during the first year of the scheme will be Rs. 3,810 (Rs.2,935 recurring and Rs.875 - - non-recurring). After deducting the estimated receipt of Rs.300 the net cost to Govt. during the first year will be Rs.3,510. The work under the scheme will be under the general supervision and control of the Cotton Breeder, S.M.C., Dharwar.

2. The object of the research work to be done under the scheme is to evolve a type of Hirsutum cotton superior to Gadag No.1 in staple, "red-leaf" resistance and ginning percentage and which will, in addition be earlier in maturing. The work will be done at the Gadag sub-station. The Govt. of Bombay has not to undertake any financial responsibility on account of the scheme. It being a new botanical research scheme, the entire cost thereof will be met by the Indian Central Cotton - - - Committee in accordance with the policy in regard to the financing of cotton schemes laid down in the Committee's letter,

No.

No.4754, dated 30th April 1937 (vide Govt. Resn., No.3715/33, dated 12th April 1938). The scheme may, therefore, be forwarded to the Indian Central Cotton Committee for approval.

3. The Finance Department may see u.o. It may be requested to treat this ref. as urgent

13-6-41

Secy. 14.6.41

JUN 16 1941

A (F) (after u.o.r.)

FINANCE DEPARTMENT
File No.
16. JUN. 1941
Serial No. A

F.O.

R.D's proposal may be accepted

17/6

U.R. to R.D. 17.6.41

Revenue Department
(5920/39)

Submitted with reference to the O.M. dated 13th June 1941 above. The appended letter to the I.C.C. Committee may now issue

20.6.41

19.6.41

Secy

A(F)

B.13/6.

JUN 24 1941

Original in A636/19123 A

~~25~~ 23

Extract from the letter from the Director of Agriculture, No.S.75, dated 30th July 1941.

- - - - -

(A) Cotton Research and Breeding schemes and cotton seed multiplication and distribution schemes - Application for (a) new schemes and (b) extensions of existing schemes.

New Schemes.

Subject 73 - Scheme for Improvement of Dharwar American cotton.

The scheme was approved for a period of 5 years at a total cost of Rs.16,640, of which Rs.15,390 less estimated receipts of Rs.1,500, i.e., Rs.13,890 will be borne by the Indian Central Cotton Committee and Rs.1,250 by the Government of Bombay.

Extract from the office note dated 23rd August 1941, approved by the Secretary (Mr.V.S.Bhide).

- - - - -

2. Scheme for improvement of Dharwar American cotton. - The scheme is estimated to cost Rs.16,440 (Rs.15,765 recurring and Rs.875 non-recurring) spread over a period of 5 years. The expenditure during the first year of the scheme was estimated at Rs.3,810 (Rs.2,935 recurring and Rs.875 non-recurring). It was assumed that it being a new botanical research scheme the entire cost thereof will be met by the Indian Central Cotton Committee in accordance with its policy in regard to the financing of cotton schemes laid down in the Committee's letter, No.4754, dated 30th April 1937 (vide Govt. Resn., No.3715/33, dated 12th April 1938). The Committee has, however, approved the scheme at a total cost of Rs.16,640 of which Rs.15,390 minus Rs.1,500 (estimated receipts), i.e., Rs.13,890 will be borne by it and the balance of Rs.1,250 by this Govt. The receipt of a further intimation from the Committee regarding its contribution towards the scheme, through the Director, will be awaited. If the contribution of this Govt. exceeds Rs.1,000 the Director of Agriculture will have to treat it as a new item of expenditure for the next year and make the necessary provision on that account in his budget estimates for that year under 40, Agriculture. He may see u.o.

Extract from memorandum from the Director of Agriculture, No.S.75, dated 4th October 1941.

- - - - -

2. Scheme for improvement of Dharwar American cotton.- Out of the balance of Rs.1,250 to be borne by Government in the above scheme a sum of Rs.330 as detailed below is required for expenditure during the next year 1942-43 :-

	Rs.
Recurring.	
(1) Office rent at Rs.15 per mensem	180
(2) Extension of fence and shed	50
Non-recurring.	
(3) Fencing expenses for 8 acres	100
Total	330

In addition to the above amount, a sum of Rs.160 on account of rent of 8 acres of land (at Rs.20 per acre) is required for expenditure during the next year and also during the remaining period of the scheme, as the Committee already decided that such expenditure, i.e., rent of land should not be borne by the Committee. I had, therefore, omitted this item while submitting the above scheme to Government. A total sum of Rs.490 (Rs.330 + 160) is, therefore, being provided as a new item of expenditure in the next year's budget (1942-43).

Revenue Department.
A.636.

Submitted with reference to the office note dated 23rd August 1941.

2. The Director has included the following proposals in the list of new items for 1942-43 :-

	Amount. Rs.
1. Scheme for the improvement of Dharwar American cotton	490
2. Extension of the Broach Cotton Breeding scheme	5,486
3. Extension of the Jalgaon cotton breeding scheme	3,351
4. Extension of the scheme for the improvement of Wagad cotton at Viramgam	1,070

A statement of new item in respect of No.2 has already been sent to the F.D. As regards Nos. 1, 3 and 4 attention is requested to the notes put up on items Nos.21, 22 and 23 on file No.P.23/26353-A submitted as a linked case. The provision for the next year in respect of the (i) extension of Jarilla seed distribution scheme and (ii) Jayavant and Gadag No.1 seed distribution scheme has been included by the Director in his budget estimates for the next year under "40, Agriculture - Grants-in-aid". No contribution from Govt. is required for the extension of the Cotton Wilt Breeding Scheme at Poona.

Provision in Pt II A p 33

3. Relevant extracts from these papers will be placed in the files relating to the sifferent schemes.

4. The Director's note on cotton policy in Gujarat and the question of appointment of a Cotton Botanist are being considered separately.

Sd.B.P.U.
Sd.N.B.Y.,
5.12.41.

Sd.H.V.R.I(engar),
5.11.

B.1/12.

Urgent.

No.P.23(a)/26353-A.

Revenue Department.

Bombay Castle, 17th November 1941.

Subject:- Budget estimates: 1942-43.
"40 - Agriculture - K - Grants-in-aid - Contributions".

Memorandum.

The undersigned presents compliments to the Secretary to Government, Finance Department, and, in continuation of the endorsement from this department, No. P.23(a)/25246-A, dated 14th November 1941, is directed to state that it has since been decided to provide Rs.1,560 in part II-A of the budget estimates for 1942-43 under "40, Agriculture - K - Grants-in-aid - Contributions" as grants-in-aid to the following schemes :-

	Rs.
Scheme for the improvement of Dharwar American cotton	490
Extension of the scheme for the improvement of Wagad cotton at Viramgam	1,070
	1,560

The provision of Rs.2,19,151 may, therefore, be raised to Rs.2,20,711.

By order of the Governor of Bombay,

Assistant Secretary to the Government of Bombay,
Revenue Department.

B.17/11.

Copy of letter No.6640 dated 21st August 1941 from the Secretary, Indian Central Cotton Committee, Bombay, to the address of the Director of Agriculture, Bombay Province, Poona.

Subject:- Scheme for improvement of Dharwar-American cotton.

I have the honour to say that the proposals for the above scheme, received with your endorsement No.S.36.K-(15) dated the 31st May, 1941, involving an estimated expenditure of Rs.16,640/- (Rs.15,765/- recurring and Rs.875/-/- non-recurring), spread over a period of five years, were considered by my Agricultural Research Sub-Committee and its recommendations, as accepted by the Indian Central Cotton Committee at its meeting held on the 19th July, 1941, are as follows:-

" The Sub-Committee recommended that the scheme be accepted, subject to the following observations:-

(1) The programme of work visualised requires the services of a Botanist; hence the Agricultural Overseer should be a man of those qualifications.

(2) In the non-recurring expenditure the cost of fencing and in the recurring expenditure the provision for office rent should be met by the Government of Bombay. The provision for recurring expenditure on an extension of fence and shed was not understood, but in any case it should be a provincial charge.

In connection with this and other Bombay schemes Mr. Rama Reddi raised a question in regard to the existing organisation of cotton breeding work in the Bombay Province. It was asertained that at present this work is done by five different cotton breeders of the Bombay Agricultural Service, Class II grade, working independently under three different Deputy Directors of Agriculture. The Sub-Committee did not consider that this arrangement is likely to be productive of quick results and considered essential the appointment of a Class I Cotton Botanist in Bombay, as already has been done in other major cotton growing provinces. Under the Director of Agriculture, this officer should co-ordinate and control all the cotton botanical research work in the province.

The Director of Agriculture, Bombay, stated that he would put up a proposal to the Bombay Government for the appointment of a Cotton Botanist. He enquired, however, whether the Committee would be prepared to bear a portion of the cost. He drew attention to the existing Resolution of the Committee in this connection in accordance with which the Indian Central Cotton Committee were committed to bear the entire cost of the proposed co-ordinating Botanist. After some discussion, however, the Sub-committee recommended that the Resolution referred to by Mr. Jenkins be rescinded and that a suitable officer should be appointed as an experimental measure, to co-ordinate and control all the cotton botanical research work in the province, the entire cost in this connection being borne by the Provincial Government. It was decided that the views of the

Provincial Government on this proposals should be obtained and placed before the Committee at its next meeting.".

In accordance with the above recommendations, the cost of the scheme to the Committee will be Rs.13,890/- as per details attached.

Sanction of the Central Government to the proposals has been applied for and a further communication will follow in due course.

PSB.11/11.

Telegrams.- Gossypium.
Post Box No.1002.

No. 1646

From
D.N. Mahta, Esq., B.A. (Oxon),
Secretary, Indian Central Cotton Committee,
Bombay.

To
The Director of Agriculture,
Bombay Province,
Poona.

Bombay, NOV 28 1941

SUBJECT.- Scheme for improvement of Dharwar-American cotton.

Sir,

I have the honour to invite reference to your endorsement No.S.36-K(15), dated the 12th November, 1941, and to convey the sanction of the Central Government to the above scheme at a cost to the Committee of Rs.13,890/-, spread over a period of five years.

2. The grant for the scheme will be subject to the attached conditions.

3. No expenditure, however, should be incurred on the scheme until sanction of the Central Government to the Committee's budget for 1942-43 has been received and communicated to you.

REVENUE DEPARTMENT
File No. 6570/39
1-DEC 1941
Serial No. A29579

I have the honour to be,
Sir,
Your most obedient servant,

Sd. D. N. Mahta,
Secretary,
Indian Central Cotton Committee.

Enclos: 1
G.

No. 1647

Bombay, NOV 28 1941

Copy forwarded to the Secretary to the Government of Bombay, Revenue Department, Bombay, for favour of information, in continuation of this office letter No.1047, dated the 31st October, 1941.

Mahta
Secretary,
Indian Central Cotton Committee.

6570/39
G. Encl. 1.

Conditions pertaining to grants for schemes financed by the Indian Central Cotton Committee.

---

(1) The final financial control over grants made by the Committee will remain with the Committee.

(2) The Director of Agriculture of the Province or any other officer authorised by him may be delegated powers by the Provincial Government to operate on the Special Deposit account opened by the Accountant General in which the grants from the Committee are credited.

(3) Officers paid from the Special Deposit Account will be the servants of the Indian Central Cotton Committee and not of Provincial Governments.

(4) Servants of the Committee who are not permanent Government servants will be entitled to subscribe to the Committee's Provident Fund if their service under the Committee is likely to extend continuously for not less than five years.

(5) Government servants employed on schemes will be treated as on foreign service under the Committee.

(6) The Committee will expect, as heretofore, that Provincial Governments will waive the recovery of leave and pension contributions on behalf of officers lent by Provincial Govts. to the Committee and any constributions made by the Provincial Government towards the cost of a scheme will be treated as the Provincial Govt.'s grant to it.

(7) Servants of the Committee who are not Govt. servants will, be entitled to leave as laid down in Government of India, Finance Department letter No. F.7(58)-R.I/34, dated the 26th October 1934, of which a copy is enclosed. A copy of the Revised Leave Rules, 1933, referred to therein is also enclosed.

(8) Officers lent by Provincial Governments to the Committee will be subject to the leave rules applicable to them as Government servants.

(9) Directors of Agriculture shall, in the matter of making appointments to subordinate posts on the Schemes under them, exercise the same powers as have been delegated to them by the Provincial Government in respect of Government appointments.

(10)(a).- Appointment to a post, of which the maximum pay exceeds Rs.250 per mensem, shall be made by the Committee in consultation with the Director of Agriculture.

(b) Appointment to a post of which the maximum salary exceeds Rs.500 per mensem cannot be made without the previous sanction of the Central Government.

(11) The powers of the Director of Agriculture as a punishing authority for servants of the Committee shall be the same as those delegated to him by the Provincial Government in respect of Government servants. The appellate authority for Committee's servants shall be the Committee.

(12) The respective provincial grades shall be accepted as the basis for the salaries to be offered to servants of the Committee. Either a deputation allowance of 25% of pay or a promotion to the next higher grade, whichever is more suitable, may be granted by the Committee in the case of Government servants deputed for service under the Committee.

(13) No general principles are laid down in the matter of allowances to be granted to Government officers who, in addition to their own duties, are placed in charge of schemes financed by the Committee. Each case will be considered on its merits.

(14) The property acquired from the Committee's grant shall remain the property of the Committee.

(15) The financial assistance rendered by the Committee will be acknowledged in any published account of the work for which a grant is given.

(16) The unspent balance of the grant for a scheme for each year will be refunded to the Committee or adjusted at the end of each year as may be desired by the Committee.

(17) During the pendency of the grant, progress reports on schemes will be furnished to the Committee whenever required.

(18) A final report on a scheme should be furnished to the Committee satisfactorily written up within the sanctioned period of the scheme.

(19) At the close of a scheme, all results of the investigations made during its continuance will be collected and supplied to the Committee, in such form as may be required, for publication.

(20) Receipts from lands leased with the aid of funds from the Committee shall be credited to the Committee from time to time as they become available.

(21) In regard to expenditure on the Committee's schemes falling under the head "Contingencies" officers authorised by the Provincial Governments to administer the grants of the Committee may exercise the same powers as have been delegated to them in respect of Provincial moneys subject to a maximum limit of Rs. 200/- for any single payment, in case their p[illegible] powers exceed this amount, and provided the budget provision under detailed sanctioned heads is not exceeded. The purchase of apparatus, typewriters and similar articles requires the specific previous sanction of the Committee.

22) Expenditure in respect of payment of rent on land and buildings should be borne by the Provincial Government concerned.

Model terms for the grant of leave to Government servants engaged on contract who are under the rule-making control of the Governor General in Council.

1. The Governor General in Council has prescribed the following terms, in respect of officers engaged on contract who are subject to his rule-making control to regulate the grant of leave to -

(a) officer of Asiatic domicile engaged on contract whether in India or abroad, and

(b) officers of non-Asiatic domicile engaged on contract but not specially recruited overseas for service in India:-

(1) Where the contract is for one year or less, earned leave admissible will be at one-twenty-second of the period spent on duty. Though ranking as earned leave, this may be granted only on medical certificate, and if subsequently it becomes necessary to grant the officer further leave, after the earned leave has been exhausted, leave on medical certificate may be granted to him subject to the condition that the total period of the two kinds of leave does not exceed 1/11th of the period spent on duty.

If the officer serves in a vacation Department, earned leave will not be admissible but he may be granted, if absolutely necessary, leave on medical certificate to the extent of 1/22nd of the period spent on duty.

(2) Where the contract is for more than one year but not more than five years, leave on medical certificate may be allowed in addition to earned leave under Rule 10(a) of the Revised Leave Rules, 1933, subject to a maximum of four months in all during the period of contract. In addition, extraordinary leave may be granted in special circumstances when no other leave is admissible subject to a total maximum limit of 3 months in respect of such leave.

If the officer serves in a vacation Department, earned leave will not be admissible.

(3) Where the contract is for a longer term than five years or an original contract for five years or less is extended so as to make the total period of contract longer than five years, leave admissible to a permanent Government servant under the Revised Leave Rules, 1933, may be allowed, subject to the restrictions that no leave on private affairs will be granted and that the leave on medical certificate will be limited to six months in all. In the case of extension of contract to a period longer than 5 years the officer will be credited with the earned leave that would have been admissible had the contract been initially one of more than five years diminished by any earned leave already taken, and leave on medical certificate if any already taken, will count against the six months' limit prescribed.

(4) Where the contract is for an indefinite period, or an original contract for a definite period is extended for an indefinite period, the leave rules for permanent Government servants in the Revised Leave Rules, 1933, except Rule 16 of those Rules regulating leave salary, will be made applicable. In the latter case, the officer will be credited with the earned leave that would have been admissible had the contract been initially one for an indefinite period diminished by any earned leave already taken and leave on medical certificate, if any already taken, will count against the limit prescribed in Rule 14 of the Revised Leave Rules, 1933.

(5) In the case of an officer falling under clause (2) above, earned leave may be granted after the expiry of the contract only when it has been applied for during the period of the contract and refused owing to the exigencies of the public service. An officer whose services are dispensed with on grounds of ill-health may be permitted to take all earned leave due to him before his service is terminated.

(6) The terms 'earned leave', 'leave on medical certificate' and 'leave on private affairs' used in the above clauses have the same meaning as that assigned to them in the Revised Leave Rules, 1933. The leave salary during leave taken under the above clauses will be regulated as follows:-

(i) An Officer on earned leave is entitled to leave salary equal to his average pay.

(ii) An Officer on leave on private affairs or on medical certificate is entitled to leave salary equal to half his average pay subject in either case to a maximum of Rs.750/-.

NOTE.- Average pay means the average monthly pay earned during the 12 complete months preceding the month in which the event occurs which necessitates the calculation of average pay.

(iii) An officer on extraordinary leave is not entitled to any leave salary.

(7) An Officer initially engaged on contract becomes subject to the Revised Leave Rules, 1933, in their entirety on his being taken into permanent employment after the expiry of his contract. In such a case the officer will be credited with earned leave that would have been admissible had his previous duty been duty as an officer in permanent employ diminished by any earned leave already taken, and leave on medical certificate if any already taken, will count against the limit prescribed in Rule 14 of the Revised Leave Rules, 1933.

2. The Governor General in Council has also decided that the model leave terms published in the Government of India, Finance Department letter No.F.-31-C.S.R.-24, dated the 11th October 1924 (Appendix No.10) as subsequently modified, will continue to apply to officers of non-Asiatic domicile under his rule-making control, who are specially recruited overseas for service in India, till they are revised in accordance with the leave terms that may be prescribed in future for new entrants to the services under the rule-making control of the Secretary of State.

(G.I.,F.D.letter No.C.7(58) R.I./34,dated 26-10-34 and 27-2-35.)

Government of India's decision.- Leave of the officers mentioned in categories (a) and (b) of paragraph 1 of this Appendix who were engaged on contract before the 26th October 1934 and whose contract is renewed after that date shall, subject to any specific conditions to the contrary in the previous contract, be regulated as follows:-

(1) If the officer has been in Government service continuously since the 15th July 1931, his leave will continue to be regulated by the rules to which he was subject under the terms of his previous contract.

(2) If the officer entered Government service after the 15th July 1931 his leave during the extended contract will be regulated by the model leave terms laid down in this Appendix and he will be allowed to carry over, as accrued leave due, the balance of leave on average pay to his credit on the date of expiry of his previous contract subject to a maximum of 90 days.

(G.I.,F.D.letter No.F.7(58) R.I./34,dated 12-9-1935).
(No.6, dated the 25th February 1936).

REVISED LEAVE RULES, 1933.

Made by the Governor General in Council in exercise of the powers conferred on him by Rules 33(2), 37, 42 and 44(d) of the Civil Services (Classification, Control and Appeal) Rules, for the Central Civil Services subject to his rule-making control in substitution for the corresponding rules in the Fundamental and the Supplementary Rules.

(G.I., F.D., Notification No.F.-12(2)-R. I./32, dated 14th December 1933 as amended by G.I., F.D., Notifications No.F.-7 (61)-R.I./34, dated 7th November 1934, No.F.7(30)-R.I.1/35, dated 4th July 1935 and No.F.-7(32)-R.I./35, dated 3rd July 1935.)

(See Fundamental Rule 58).

1. These Rules may be called the Revised Leave Rules, 1933.

2. Subject to the exception hereinafter contained, these rules shall apply (with retrospective effect where necessary from the commencement of service counting for leave) to the following classes of persons employed in a service governed by the provisions of the Civil Services (Classification, Control and Appeal) Rules, whose domicile is Asiatic or who, if their domicile is non-Asiatic, have not been specially recruited overseas for service in India and who are under the rule-making control of the Governor General in Council:-

(i) all persons who enter or have entered or are or have been re-employed in Government service, whether in a permanent or other capacity, on or after 16th July 1931;

(ii) persons who were in service whether in a permanent or other capacity on 15th July 1931, if there is a break in their service after that date;

(iii) persons who were on probation on 15th July 1931, and who were subsequently confirmed in the service or post for which they were on probation, provided that they were specifically warned at the time of appointment on probation that the leave rules were under revision;

(iv) persons who entered service as a result of a competitive examination held before 16th July 1931, provided they were specifically warned before or at the time of the examination that the leave rules were under revision; and

(v) persons who were in service as paid apprentices on the 15th July 1931, provided that they were specifically warned at the time of appointment as apprentices that the leave rules were under revision.

Exception.- Persons in respect of whom special provisions regarding leave have been made shall be governed by such special provisions.

NOTE 1.- For the purpose of these Rules the term 'Government service' shall be deemed to include prior service under Provincial Governments in India or under Local Funds administered by Government.

NOTE 2.- For the purpose of clause (ii) of this rule, a person re-employed under any of the Re-employed Personnel (Conditions of Service) Rules shall be regarded as having had a break in his service.

NOTE 3.- Persons transferred from the Service of a local Government to that of the Government of India shall be deemed to have been specifically warned for the purposes of clause (iii), clause (iv) or clause (v) of this rule if having been in probationary service under the local Government on the 15th July 1931 or having entered the service of the local Government as a result of a

competitive examination held before the 16th July 1931 or having entered the service of the local Government as paid apprentices before the 16th July 1931, they received from the local Government a warning of the nature mentioned in clause (iii), clause (iv) or clause (v) as the case may be, with reference to the revision of leave rules by the local Government.

NOTE 4.- The provisions of Note 3 apply mutatis mutandis to persons transferred from the service of a Local Fund administered by Government.

Government of India's decisions.- These rules replace in respect of those persons to whom they are made applicable by Rule 2 the corresponding leave rules in the Fundamental and the Supplementary Rules. The other rules in the Fundamental and the Supplementary Rules shall remain operative (as shown in the Annexure) in the case of those persons except in so far as they may be inconsistent with or repugnant in subject or context to these rules. In the application of the remaining Supplementary Rules to persons governed by these rules, leave on average pay not exceeding four months shall be taken to mean earned leave not exceeding 90 or 30 days as the case may be.

(G.I., F.D., letter No.F.-12(2)-R.I./32, dated the 16th December 1933)

3. In these rules-

"leave" includes earned leave, leave on private affairs, leave on medical certificate and extraordinary leave;

"earned leave" means leave earned in respect of periods spent on duty;

"earned leave due" means the amount of earned leave, calculated as prescribed in Rule 9 or Rule 10, diminished by the amount of earned leave taken;

"officer in permanent employ" means an officer who holds substantively a permanent post or who holds a lien on a permanent post or who would hold a lien on a permanent post had the lien not been suspended.

4. Leave cannot be claimed as of right. Discretion is reserved to the authority empowered to grant leave to refuse or revoke leave at any time according to the exigencies of the public service.

5. Unless the Governor General in Council shall otherwise determine, an officer shall cease to be in Government service if he is continuously absent from duty for five years whether with or without leave, unless such absence is absence on foreign service in India.

6. Any kind of leave under these rules may be granted in combination with or in continuation of any other kind of leave.

7. No leave shall be granted beyond the date on which an officer must compulsorily retire:

Provided that the authority empowered to grant leave may allow any officer who has been denied in whole or in part on account of the exigencies of the public service the earned leave which was due to him pending retirement, the whole or any portion of the earned leave so denied, even though it extends to a date beyond the date on which such officer must compulsorily retire.

Provided further that an officer whose service has been extended in the interests of the public service beyond the date of his compulsory retirement may similarly be granted either within the period of extension or, if the conditions of the preceding proviso are satisfied, after its expiry, any earned leave which could have been granted to him under the preceding proviso had he retired on that date and in addition any earned leave due in respect of such extension.

8. Subject to the provisions of rule 4 and rule 7, an officer may at any time be granted the whole or any part of the earned leave due to him.

Auditor General's decisions.- In respect of the Government servants who are governed by the Revised Leave Rules leave accounts need not be maintained in the forms prescribed in paragraph 33 of the Instructions issued by the Auditor General under Fundamental Rule 74 (Appendix 8).

(Ar. G.'s letter No.20-A./122-31, dated the 26th January 1934).

9. The earned leave admissible to an officer in permanent employ is,-

(a) to an officer in superior service-

(i) if of non-Asiatic domicile recruited in India and entitled to passage concessions - one-seventh,

(ii) if not included in Sub-clause (i) - one-eleventh, and

(b) to an officer in inferior service - one-twenty-second of the period spent on duty.

Provided that when the earned leave due amounts to-

(i) 150 days in the case of an officer included in sub-clause (i) of clause (a);

(ii) 120 days in the case of an officer included in sub-clause (ii) of clause (a), who is stationed at, and proceeds on leave from, a remote locality within the meaning of Fundamental Rule 105(d);

(iii) 90 days in the case of any other officer included in sub-clause (ii) of clause (a);

(iv) 30 days in the case of an officer in inferior service,

the officer ceases to earn such leave.

G.I., F.D., Notification No.F.7(9)-R.I/36, dated the 4th February 1937).
(No.116, dated the 27th February 1937).

Government of India's decisions.- In recalculating the leave due or admissible, with retrospective effect, under the Revised Leave Rules the leave already taken or sanctioned under the Fundamental or the Supplementary Rules shall be accounted for as follows:-

(i) Leave on average pay, whether taken with or without medical certificate, against "earned leave".

(ii) Leave on half average pay without medical certificate, against "leave on private affairs"; and

(iii) Leave on half average pay on medical certificate, against "leave on medical certificate".

Where leave under the Fundamental or the Supplementary Rules has already been enjoyed, or is being enjoyed before the promulgation of the Revised Leave Rules, and the leave or leave-salary taken or sanctioned exceeds that admissible under the revised leave rules, the excess of leave or leave-salary is hereby authorised.

(G.I., F.D., letter No.F.12 (2)-R. I./32, dated the 16th December 1933).

Government of India's decision.- In calculating 'earned leave', the actual number of days of duty performed should first be counted and then multiplied by one-eleventh or one-twenty-second as the case may be, the product expressed in days (and fractions of a day) and limited to 120 or 90 days or 30 days respectively being the 'earned leave' admissible under Rules 9 and 10 of these Rules.

(G.I., F.D., letter No.F.7(47)-R. I/36, dated the 23rd September 1936).
(No.79, dated the 29th October 1936).

(2) It has been decided that sub-clause (i) of clause (a) of Rule 9 of the Revised Leave Rules, 1933, as amended by Correction Slip No.116, dated the 27th February 1937, shall have effect from the date on which these rules came into force.

(G.I., F.D., letter No.F.7(41) R.I./37, dated the 1st June 1937).
(No.138, dated the 28th July 1937).

Auditor General's decision.- For the purpose of calculation of earned leave due under the Revised Leave Rules, 1933, fractions of a day need not be rounded off.

(Auditor General's letter No.220-A/109-36, dated the 19th May 1936).
(No.58, dated the 27th July 1936).

(2) Under Article 157 (a), Audit Code, Volume I, the decision contained in the Government of India, Finance Department letter No.F.7 (47)-R.I/36, dated the 23rd September 1936 (vide correction slip No.79, dated the 29th October 1936) should not be given retrospective effect, that is, no re-adjustment should be made of the leave salary already paid, but the correct balance of "earned leave" as it would have been, if the correct method of calculation had been applied from the date the Revised Leave Rules, 1933, came into force, should be re-calculated as and when each person concerned proceeds on leave after the issue of the new interpretation.

(Ar. General's letter No.46-A./24-37, dated the 10th February 1937).
(No.120, dated the 30th March 1937).

The Auditor General has decided with the concurrence of the Government of India that the method of calculation of leave admissible to an official on promotion from inferior to superior service under th Revised Leave Rules, 1933, should be as follows:-

The earned leave due to the official should be calculated as 1/22 of the period spent on duty in inferior service, and at 1/11 of the period spent on duty in superior service subject to the condition that the maximum is applied in both the cases separately. In other words the earned leave due to the official in inferior service should first be calculated at 1/22 of duty and the limit of 30 days applied. The balance of earned leave should then be carried over and added to the amount of earned leave admissible from the date of promotion to the superior service, the total amount of earned leave being restricted to the maximum admissible to an officer in superior service in permanent employ.

(Auditor General's letter No.311-A/197-37, dated the 9th October 1937).
(No.151, dated the 27th November 1937).

10. (a) The earned leave admissible to an officer not in permanent employ is when he is in superior service, one-twenty-second of the period spent on duty, provided that when the earned leave due amounts to 30 days he ceases to earn such leave.

(b) No earned leave is admissible to an officer in inferior service not in permanent employ.

Government of India's decision.- In calculating 'earned leave', the actual number of days of duty performed should first be counted and then multiplied by one-eleventh or one-twenty-second as the case may be, the product expressed in days (and fractions of a day) and limited to 120 or 90 days or 30 days respectively being the 'earned leave' admissible under Rules 9 and 10 of these Rules.

(G.I., F.D., letter No.F.7(47)-R.I/36, dated the 23rd September 1936).
(No.79, dated the 29th October 1936).

Auditor General's decision.- For the purpose of calculation of earned leave due under the Revised Leave Rules, 1933, fractions of a day need not be rounded off.

(Auditor General's letter No.220-A/109-36, dated the 19th May 1936).
(No.58, dated the 27th July 1936).

(2) Under Article 157 (a), Audit Code, Volume I, the decision contained in the Government of India, Finance Department letter No.F. 7(47)-R.I/36, dated the 23rd September 1936 (vide correction slip No. 79, dated the 29th October 1936) should not be given retrospective effect, that is, no readjustment should be made of the leave-salary already paid, but the correct balance of "earned leave" as it would have been, if the correct method of calculation had been applied from the date the Revised Leave Rules, 1933, came into force, should be re-calculated as and when each person concerned proceeds on leave after the issue of the new interpretation.

(Ar. General's letter No.46-A/24-37, dated the 10th February 1937).
(No.120, dated the 30th March 1937).

11. An officer not in permanent employ appointed without interruption of duty substantively to a permanent post will be credited with the earned leave which would have been admissible if his previous duty had been duty as an officer in permanent employ diminished by any earned leave already taken. Leave is not an interruption of duty for the purpose of this rule.

Government of India's decision.- A question having arisen whether commutation of extraordinary leave into earned leave in the case of Government servants to whom the Revised Leave Rules, 1933, apply is permissible, the Governor General in Council has decided that the authority which granted leave to a Government servant can commute it retrospectively into leave of a different kind which may be admissible but that the Government servant concerned cannot claim it as a matter of right.

(G.I., F.D., letter No.F.7(34)-R.I./36, dated the 13th August 1936).
(No.64, dated the 28th August 1936).

12. (a) Earned leave is not admissible to an officer in permanent employ serving in a vacation department in respect of duty performed in any year in which he avails himself of the full vacation.

(b) The earned leave admissible to such an officer in respect of any year in which he is prevented from availing himself of the full vacation is such proportion of 30 days earned leave if he is in superior service, or of 15 days earned leave if he is in inferior service, as the number of days of vacation not taken bears to the full vacation.

If in any year he does not avail himself of the vacation, earned leave is admissible to him in respect of that year in accordance with the provisions of rule 9.

12. (c) Vacation may be taken in combination with or in continuation of any kind of leave under these rules, provided that the total duration of vacation and earned leave taken in conjunction, whether the earned leave is taken in combination with or in continuation of other leave or not, shall not exceed 90 days if the officer is in superior service or 30 days if he is in inferior service.

(d) Earned leave is not admissible to an officer serving in a vacation department who is not in permanent employ.

13. Leave on private affairs may be granted only to an officer in permanent employ in superior service and to the following extent, namely:-

(a) if belonging to a Central Service Class I or Class II or a Specialist Service for 18 months in all, and on any one occasion for not more than 3 months if spent wholly in Asia or for not more than 9 months if spent wholly outside Asia; if the leave is spent partly in and partly outside Asia, the period shall be 3 months plus such time as is actually spent outside Asia subject to a maximum total period of 9 months;

(b) If belonging to a Subordinate Central Service for 12 months in all, and on any one occasion for not more than 3 months if spent wholly in Asia or for not more than 6 months if spent wholly outside Asia; if the leave is spent partly in and partly outside Asia, the period shall be 3 months plus such time as is actually spent outside Asia subject to a maximum total period of 6 months.

14. Leave on medical certificate not exceeding 12 months in all during an officer's service may be granted to an officer in permanen employ. Such leave shall be given only on production of a certificat from such medical authority as the Governor General in Council may by general or special order specify in this behalf and for a period not exceeding that recommended by such medical authority:

Provided that when the maximum period of 12 months is exhausted further leave on medical certificate not exceeding 6 month in all may be granted in exceptional cases on the recommendations of a medical board.

Auditor General's decision.- It has been decided with the concurrence of the Government of India that the authority empowered to grant leave under the Revised Leave Rules, 1933, has not been given the power to alter the nature of leave, though under Rule 4 of these rules he has the power to refuse or revoke leave at any time according to the exigencies of the public service. Under Rule 14 there is no restriction on an officer whose application for leave is supported by medical certificate being at his option granted leave on medical certificate, even when earned leave is due to him.

(Auditor General's No.21-A/271-36, dated the 20th January 1937).
(No.114, dated the 27th February 1937).

15. (1) Extraordinary leave may be granted to any officer in special circumstances:-

(a) when no other leave is by rule admissible, or

(b) when other leave is admissible, but the officer concerned applies in writing for the grant of extraordinary leave.

(2) Except in the case of an officer in permanent employ, the duration of extraordinary leave shall not exceed 3 months on any one occasion.

15. (3) The authority empowered to grant leave may commute retrospectively periods of absence without leave into extraordinary leave.

16. (1) An officer on earned leave is entitled:

(a) if in permanent employ to leave salary equal to his average pay, or to his average substantive pay for the 12 complete months preceding the month in which leave is taken, whichever is greater,

(b) if not in permanent employ to leave salary equal to his pay on the day before the leave commences.

(2) An officer on leave on private affairs or leave on medical certificate is entitled to leave-salary equal to half his average pay, or to half his average substantive pay for the 12 complete months preceding the month in which leave is taken, whichever is greater, subject in either case to a maximum of Rs.750/-.

(3) An officer on extraordinary leave is not entitled to any leave salary.

Explanation.- For the purposes of this rule, average pay means the average monthly pay earned during the 26 complete months preceding the month in which the event occurs which necessitates the calculation of average pay, and substantive pay means the substantive pay of the permanent post which the officer holds substantively or on which he holds a lien or would hold a lien had the lien not been suspended.

Government of India's decision.-(1) A question having arisen whether the condition of "no extra expense" was still in force in respect of the inferior Government Servants subject to the Revised Leave Rules, 1933, the Government of India have decided that since the condition of "no extra expense" laid down in F.R. 87 does not exist in the corresponding rule 16 in the Revised Leave Rules, this condition should be considered as superseded by the Revised Leave Rules according to the Government of India orders below rule 2 and paragraph 4 of the Annexure to this Appendix.

(G.I., F.D., letter No.F.7(15)-R.I/36, dated the 21st April 1936).
(No.45, dated the 25th June 1936).

(2) The average substantive pay referred to in Rule 16(1)(a) is to be calculated on the basis of the permanent service rendered during the 12 complete months immediately preceding the month in which leave is taken and in the manner indicated in Audit Instruction No.(1) under F.R. 9(2). If the period of permanent service be less than 12 months, the actual period of such service should be taken into account.

(G.I., F.D., No.F.7(57).R.I/35, dated the 10th October 1935).
(No.115, dated the 27th February 1937).

Submitted with reference to Govt. letter, No.5920-A/39, dated 24th June 1941.

2. The Indian Central Cotton Committee has intimated the sanction of the Central Govt. to the scheme for the improvement of Dharwar American Cotton at a cost of Rs.13890 to the Committee spread over a period of five years. No - - expenditure is, however, to be incurred on the scheme until sanction of the - - Central Govt. to the Committee's budget for 1942-43 is received and communicated to the Director.

3. The scheme is estimated to cost Rs.16,640 (recurring Rs.15,765 and non-recurring Rs.875) spread over 5 years. Against this receipts to the extent of Rs. 1,500 are estimated to accrue from the scheme ~~xxx~~ during the period. In accordance with its policy that expenditure on ~~recurr~~ rent of land should be borne by the Provincial Govts. concerned, the Indian Central Cotton Committee is not prepared to pay Rs.1,250/- being the expenditure on account of rent for office extension of fence and shed,etc. The Director had, therefore, proposed a - - provision of Rs.490 on that account as a new item of expenditure in the next - - year's budget. The amount being small, it was decided, in consultation with the Finance Department, ~~xx~~ not to treat it as a new item. The amount has - - accordingly been provided in part II-A of

of the budget for 1942-43 under "40, Agriculture - K - Grants-in-aid, Contributions". The Director requests that orders --

(i) sanctioning the scheme for five years,

(ii) allowing him to accept the subsidy of Rs.13,890 offered by the Indian Central Cotton Committee,

(iii) retaining the provision of Rs.490 in the next year's budget, and

(iv) authorising him to include the necessary provision in the budget estimates till the close of the scheme,

may be issued.

4. As regards (iv) above, it may be noted that as in the orders to be issued sanction will be accorded to Govt. of Bombay's contribution of Rs.1,250 during the period of the extension of the scheme it will not be necessary specifically to authorise the Director of Agriculture to continue including the provision on account of Govt. contribution. in his budget estimates for the subsequent years till the termination of the scheme. The requisite orders may issue on receipt of the intimation from the Indian Central Cotton Committee that its budget for 1942-43 has been sanctioned by the Central Govt.

5. The F.D. may see the HPs unofficially.

BPU

8/12/41

Secy

HP 8/12

FINANCE DEPARTMENT
File No.
9 DEC 1941
Serial No.

U.O. to the F.D. of 8th Dec 1941.

B.8/12.

The G.C.C.Committee has intimated the sanction of the Central Govt. to the scheme for the improvement of Dharwar American Cotton at a cost of Rs.13,890 to it spread over 5 years and the Bombay Govt. share of the cost is Rs.1250.

F.D. may agree to the proposal of R.D.

12/12

12.12.41

13.12.41

13/12

Thru G. & Ag. Bro.

REVENUE DEPARTMENT
File No. D.S. (B)
15 DEC 1941
Serial No. A

V. o. r to R.D. 15/12/41

Revenue deptt

Pl see para 4 of the ord. dated 8th Dec 1941

2. Orders on these papers may be held over pending receipt of a further communication from the G.C.C. Committee

18-12-41

19.12.41

53 -61

Revenue Department.

Submitted with reference to the office note dated 8th December 1941.

2. Orders on these papers were held over pending receipt of a further communication from the Indian Central Cotton Committee (vide para. 3 of the Committee' letter, p41 dated 28th November 1941). As the Director of Agre. has asked p59 Govt. to accord sanction to the scheme it may be assumed that the Central Govt. have since accorded its sanction to the Committee's budget for 1942-43 and the same must have been communicated to the Director of Agre. If so, the appended Govt.* Resn. may now issue.

*Draft destroyed

9.4.42

9.4.42

Secy

NO. S-36-K-(15) OF 1942.

POST BOX No. 45
TELEGRAPHIC ADDRESS:
"BOMAGRI"

FROM W.J.Jenkins, Esqr., M.A., B.Sc., C.I.E., I.A.S.
DIRECTOR OF AGRICULTURE,
BOMBAY PRESIDENCY,
POONA;

To

The Secretary to Government,
Revenue Department,
Bombay.

VERY URGENT

REVENUE DEPARTMENT
File No. 5920/39
13 APR 1942
Serial No. A 9342

POONA, DATED 11th April 1942.

SUBJECT:— Scheme for improvement of Dharwar-American Cotton.

SIR,

I have the honour to solicit reference to this office letter No.S-36-K-(15), dated 12th November 1941 and subsequent reminder No.S-36-K-(15), dated 23rd March 1942, on the subject mentioned above and to request the favour of very early orders of Government in the matter.

2. I have allowed the Deputy Director of Agriculture, S.D., Dharwar to commence the scheme with effect from 4th April 1942 in anticipation of Government orders in the matter and would request that my

action....

action may please be confirmed.

I have the honour to be,
Sir,
Your most obedient servant,

Director of Agriculture.

aab/11.4.

~~58~~ 57 67

Revenue Deptt.

Orders in the matter are ~~being issued~~ in print vide the Resn. of 8th April '42 at page 63 ante. p. 65 The Dir's. action in commencing the scheme in anticipation of Govt. sanction may therefore be confirmed. No reference to F.D. appears necessary. The memo. overleaf may issue

[illegible] 21.4.42 The Press is being expedited separately.

[illegible] 22/4/42

Please put this up after the issue of the G.R.

[illegible] 23.4.42.

Resubmitted after issue of the G.R. at page 69 post.

[illegible] 25.4.42 The memo after cor. to B.

[illegible] 27.4.40.

J.A. Secy

FINANCE DEPARTMENT
File No.
29 APR 1942
Serial No.

J.A.S.

cor to F.D. [illegible] 28.4.42

No. 5920 - A/39.
Rev. Deptt.
~~B.C., 2nd April~~ May 42.

Subject: Cotton
Dharwar American —
Scheme for botanical
research work on
improvement of,

Memo.

The usfc. to the Dir. of Agre. and
ver. to his letter, p. 65 No. S-36-K(15), d 11.6.42,
is directed to intimate that the orders ~~in~~
~~the matter have been~~ were issued ~~separately~~ in S.R. No. 5920/39 d 8.4.42.

2. The Dir's. action in commencing
the scheme from 4.6.42, in anticipation
of Govt. sanction, is confirmed.

By order of the G. of B.,

27.4.42.

Asstnt. Secy. to Govt. 21.6.42

ISSUED
Date 4-5.

ISSUED
Date 4-5

Copies forward to -
the A.G. (through the Sd.
the Sd.

B/C (cdis)

Cotton.
Dharwar-American (Hirsutum) —.
Scheme for botanical research work on improvement of,

GOVERNMENT OF BOMBAY.

REVENUE DEPARTMENT.

Resolution No. 5920/39.

Bombay Castle, 8th April 1942.

Letter from the Director of Agriculture, No. S. 36-K(15), dated the 31st May 1941.

Letter to the Secretary, Indian Central Cotton Committee, No. 5920-A/39, dated the 24th June 1941 :—

"I am directed to forward copies* of the letter from the Director of Agriculture No. S. 36-K(15), dated 31st May 1941, and its accompaniment, and, in the circumstances explained therein, to request that the Director's scheme for further botanical research work on the improvement of the Dharwar-American (Hirsutum) cotton may be approved and necessary funds amounting to Rs. 16,640 sanctioned for expenditure on the scheme spread over a period of five years."

Letter from the Director of Agriculture, No. S. 36-K(15), dated the 12th November 1941 :—

x S. No. 2806 Destroyed

"I have the honour to invite reference to Government endorsement below their letter No. 5920-A/39, dated 24th June 1941, addressed to the Secretary, Indian Central Cotton Committee, Bombay, and to state that the proposals for the scheme for improvement of Dharwar-American cotton, involving an estimated expenditure of Rs. 16,640 (Rs. 15,765 recurring + Rs. 875 non-recurring) spread over a period of five years have been considered by the Agricultural Research Sub-Committee and according to the recommendations made by this sub-committee, this scheme has been finally approved by the Indian Central Cotton Committee at a net cost of Rs. 13,890 to the Committee as per details† attached (*vide* enclosed copy of the letter*, No. 6640, dated 21st August 1941, from the Secretary, Indian Central Cotton Committee, Bombay). It will thus be seen that a total sum of Rs. 1,250 spread over the five year's period of the scheme as detailed below has been omitted from the budget estimates of the scheme for the reasons given in the Secretary, Indian Central Cotton Committee's letter referred to above—

Contingencies.	Amount. Rs.
(1) Recurring—	
(*a*) Office rent	900
(*b*) Extension of fence and shed	250
(2) Non-recurring—	
Fencing expenses for 8 acres	100
Total ...	1,250

In view of this it is necessary to provide the total amount of Rs. 330 (required for the first year of this scheme under the above heads) in the next year's budget of the Dharwar Farm.

"2. Similarly when the above scheme was prepared by the Deputy Director of Agriculture, S. D., a provision of Rs. 160 per annum for rent of land at Rs. 20 per acre for 8 acres was made therein, but according to the policy adopted by the Committee, I considered that the Committee would not be prepared to bear this expenditure and therefore omitted this provision from the budget estimates of the scheme. As the work in the scheme cannot be undertaken without any additional land, I consider that this provision of Rs. 160 per annum is an absolute necessity in the interest of the scheme. I have accordingly included a total provision of Rs. 490 (Rs. 330 as per details given above + Rs. 160 for rent of land) in the list in Part II-C of the new items of expenditure for the next year submitted with my letter No. P. 4 of 16th ultimo.

* Not printed.

† Printed as accompaniments to this Resolution.

"3. I would now request that you will be so good as to move Government to sanction the above scheme, to allow me to accept the subsidy of Rs. 13,890 offered by the Indian Central Cotton Committee for a period of five years of the scheme, to retain the total provision of Rs. 490 in the next year's budget estimates and also to allow me to include the necessary provision on this account in the budget estimates of this Department for the subsequent years till the closure of this scheme."

Letter from the Secretary, Indian Central Cotton Committee, No. 1646, dated the 28th November 1941—Conveying the sanction of the Central Government to the scheme for the improvement of Dharwar-American cotton at a cost to the Committee of Rs. 13,890 spread over a period of five years and making remarks.

Letter from the Director of Agriculture, No. S. 36-K(15), dated the 23rd March 1942.

RESOLUTION.—The five year scheme for the improvement of Dharwar-American cotton at a total cost of Rs. 16,640 *less* estimated receipts Rs. 1,500 is sanctioned. The subsidy of Rs. 13,890 offered by the Indian Central Cotton Committee should be accepted.

2. Sanction is also accorded to the Government of Bombay's total contribution of Rs. 1,250 spread over five years towards the cost of the scheme.

3. The requisite provision on account of Government contribution of Rs. 490 payable during 1942-43 has been made in the budget under the head "40, Agriculture—Grants-in-aid, Contributions, etc."

By order of the Governor of Bombay,

ISSUED
Date 24/4/42

For (M. J. DESAI,)
Secretary to Government.

G. R., No. 5920/39, R. D., dated the 8th April 1942.

To

The Director of Agriculture,
The Accountant General (through the Finance Department),
The Finance Department,
The Secretary, Indian Central Cotton Committee.

Accompaniment to Government Resolution, Revenue Department, No 5920/ dated the 8th April 1942.

BUDGET ESTIMATES OF EXPENDITURE—GADAG STATION.

A—Recurring.

Items.	1st year.	2nd year.	3rd year.	4th year.	5th year.	Total.	Remarks.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
I.—Pay of Establishment—							
Agricultural Overseer at Rs. 110—8—150	1,320	1,416	1,512	1,608	1,704	7,560	
One Counter at Rs. 20—1—30 ...	240	252	264	276	288	1,320	
One peon at Rs. 15	180	180	180	180	180	900	
Leave salary	35	36	37	38	39	185	The Agricultural Overseer, as proposed, will be a departmental man and hence no provision of leave salary and Provident Fund is made for him.
Total ...	1,775	1,884	1,993	2,102	2,211	9,965	
II.—Travelling Allowance of the staff ...	50	50	50	50	50	250	
III.—Contingencies—							
Office expenses and Miscellaneous ...	150	150	150	150	150	750	
Pay of monthly labour at Rs. 15 per mensem.	180	180	180	180	180	900	
Cultivation charges at Rs. 20 per acre for 8 acres.	160	160	160	160	160	800	
Upkeep of livestock	360	360	360	360	360	1,800	
Service Postage and Telegrams ...	30	30	30	30	30	150	
Total, Contingencies ...	880	880	880	880	880	4,400	
Grand Total ...	2,705	2,814	2,923	3,032	3,141	14,615	

B—Non-recurring Expenditure.

Implements.

	Rs.
Two iron ploughs	100
Wooden ploughs, harrows, seed drill, intercultures, levelling plank, etc.... ...	50
Cart	100
Pair of bullocks	300
Office equipment	150
Unforeseen expenses (balance etc)	75
Total ...	775

Total, recurring ...	14,615
Total, non-recurring ...	775
Grand total ...	15,390
C—Estimated receipts at about Rs. 300 per year for 5 years ...	−1,500
	13,890

No. of 1942.

Copy forwarded for information and guidance to

R.D. file no. 5920/39.

Finance Deptt.

These papers may be seen and returned no to the R.D.

GNCS
29/4/42

30/4

nor to the R.D. dated 30-4-42

REVENUE DEPARTMENT
File No.
1 - MAY 1942
Serial No. A

RC

73 73

D. 5164

From D. N. Mahta, Esq., B.A.(Oxon.),
Secretary, Indian Central Cotton Committee,
Bombay.

To The Director of Agriculture,
Bombay Province,
Poona.

Dated Bombay, JUN 10 1942

SUBJECT:- Scheme for improvement of Dharwar-American cotton.

Sir,

In continuation of my letter No.1646, dated the 28th November, 1941, I have the honour to say that the Committee's budget for 1942-43, which includes provision for the above scheme, has now been sanctioned by the Central Government.

REVENUE DEPARTMENT
File No. 5920/39
11 JUN 1942
Serial No. A 14278

I have the honour to be,
Sir,
Your most obedient servant,

Sd/- D. N. Mahta,

Secretary,
Indian Central Cotton Committee

D. No. 5165 Dated JUN 10 1942

Copy forwarded to the Secretary to the Government of Bombay, Revenue Department, Bombay, for favour of information in continuation of this office endorsement No.1647, dated the 28th November, 1941.

Secretary,
Indian Central Cotton Committee

5920/39
A-27579

Reverse Dept

Please see G.R. No. 8920/39 p69 dated 8th April 1942, the Secretary's letter No. 1646 dated 28th Nov. 1941 presented in the preamble of the Resn. & O.M. p69 dated 8th April 1942. No action is called for on the present letter from the Committee. It may be filed

17.6.42

9 AS

18.6.42.

Letter

To
The Secretary to Government,
Revenue Department,
Bombay.

REVENUE DEPARTMENT
File No. 5920/39
2- SEP. 1942
Serial No. A 20202

No.S.36-K(15) of 1942 Poona, 1st Spel ~~August~~ 1942

Subject:- Scheme for botanical research work on improvement of Dharwar-American Cotton.

Reference Government Resolution, Revenue Department No.5920/39 dated 8th April 1942, on the above subject. The Government of Bombay's total contribution of Rs.1250/- towards the cost of the above scheme sanctioned in para 2 of the above Government Resolution includes a provision of Rs.100/- under Non-recurring - Fencing expenses for 8 acres as detailed in this office letter No.S-36-K(15) dated 12-11-1941 printed in the preamble of the above Government Resolution and this amount which was provided in the Budget of this Department under "Grants-in-aid, contribution etc." for the current year 1942-43 has been found insufficient for the purpose (for which it has been sanctioned) owing to high prices for fencing materials due to war. The Deputy Director of Agriulture, Southern Division has now approached me with a request to provide Rs.100/- for this purpose in the Budget Estimates of this Department for 1943-44 in order to enable him to carry out the wire fencing completely. As this is a new item of additional expenditure, I cannot include the same in the usual provision on account of Government contribution towards the above scheme in the next year's Budget under the head "Grants-in-aid etc." without the specific sanction of Government. I would, therefore, request that you will be so good as to move Government to sanction this additional amount of Rs.100/- for wire fencing and to allow me to provide the same as non-recurring expenditure in the next year's Budget under "40-Agriculture --Grants-in-aid, contribution etc."

Director of Agriculture.

gvm 31/8

In the circumstances reported [illegible]

may be authorised to enter the additional amount of Rs.100 required for wire fencing during 1943-44 in Part II-A of his budget estimates for next year under "40, Agre. - J - Grants-in-aid, Contributions". A draft letter is put up overleaf. As the amount is small, it is not necessary to treat it as a new item for the 1943-44 budget.

2. The F.D. may see u.o. before issue of orders.

8.9.42

U.S. (Mr. Bowman) 8.9.42

Secy.

8.9.42

FINANCE DEPARTMENT
File No.
9 SEP. 1942
Serial No.

F.D. 9-9-42

Finance Deptt.

Seen and returned to the R.D

11.9.42

11/9

to R.D. 11-9-42

REVENUE DEPARTMENT
File No.
12. SEP. 1942
Serial No. A

To

The Director of Agre.

No.5920-A/39. 12th Bombay,
Septr. 1942.

Reference your letter, No.S.36-K(15), dated 1st September 1942. You are authorised to include the amount required for expenditure on wire-fencing ~~in~~ under the scheme in Part II-A of the Dir.'s budget estimates for ~~the~~ next year under "40, Agre. - J - Grants-in-aid, Contributions".

By order of the Governor of Bombay,

Secretary to Government.

Copies, with copies of the Dir.'s letter, forwarded for information to --

✓ the Acctt. General (~~through the F.D.~~),

✓ the Finance Deptt.

ISSUED
Date 15/9

ISSUED
Date 15/9

No. S-36-K of 1943.

From

Dr. G.S.Cheema, I.A.S.,
Director of Agriculture,
Bombay Province, Poona.

To

The Secretary,
Indian Central Cotton Committee,
Bombay.

REVENUE DEPARTMENT
5920/39
27. MAY 1943
Serial No. A(A)13987

Poona, 26th May, 1943.

Subject:- Progress Report for 1942-43 of the scheme for improvement of Dharwar-American Cotton.

Sir,

With reference to your letter No.3580, dated 13th April, 1943, on the above subject, I have the honour to forward herewith the progress report for 1942-43 of the scheme for improvement of Dharwar-American Cotton for consideration at the forth-coming meeting of the Indian Central Cotton Committee to be held in July, 1943.

Sd/- G.S.Cheema,

Director of Agriculture.

Through: The Secretary to Government, R.D., Bombay.
(with one spare copy for the use of Government).

80

No.5920/39-A.
Revenue Department.
Bombay Castle, 1st January 1943.

Forwarded to the Secretary, Indian Central Cotton Committee.

By order of the Governor of Bombay,

1-1-43

Assistant Secretary to the Government
of Bombay, Revenue Department.

31.5.43

ISSUED
Date 1/6/43

Dharwar-American Cotton Improvement Scheme
at Gadag (Bombay-Karnatak).

Progress Report for 1942-'43.

I Programme of work for 1942-'43.

1. Replicated field trial of the bulks of the promising cultures from 9-7-6-6 and 4-4-1-1 (outcome of the cross G I x Co_2) with Gadag I as check.

2. Testing of promising progenies from fourteen families, derived from the cross Gadag I x Co_2 F^{11}, for yield, quality, earliness and resistance to red-leaf blight, with Gadag I and Co_2 as checks.

3. Replicated progeny row tests of 17 progenies from family No.9, 2 from family No.4 and, 3 from family No.12, derived from Gadag I x Co cross, with Gadag No.I and ~~G~~x Co_2 as checks.

4. ~~Rxxxxxxxxxxxxxxxx~~ Trial of the progeny of interspecific hybrids and back-crosses done at Surat Farm, with a view to select promising material.

5. Testing of F_2 of the cross 9-7-6-6 x Peruvianum and it's reciprocal.

6. Effecting the following crosses:-
(i) G I x Co_2 (ii) G I x 9-7 (iii) G I x 4-1 (Iv) 4-1 x 9-7
(v) G I x Co_3 (vi) G I x Co_4 and their reciprocals.

Cotton Breeder, S.M.C.
Dharwar.

.....

Dy. Director of Agriculture,
S. D., Dharwar.

at Gadag (Bombay-Karnatak).

Progress Report for 1942-'43. (in non-technical language)

(1) The Scheme for the improvement of the Dharwar-American Cotton of the Bombay-Karnatak, has been started by the Indian Central Cotton Committee, aided by the Government of Bombay from 4-4-1942 at Gadag. The year, under report, is the first of the Scheme, the object of which, is to evolve a Dharwar-American Cotton type superior in yield and other economic characters, earlier in maturity and, more resistant to "red-leaf-blight" than Gadag No.I. The results of this scheme would be applicable roughly to 3,00,000 acres.

(2) The Scheme has been sanctioned, in the first instance, for a period of five years.

(3) The season started rather late and was abnormal. The total rainfall, which was 18inches and 33 cents, was ~~xinmxfanitxx~~ very much below the average; distribution of rain was also faulty. Sowing of Cotton commenced late by about 12 days. Germination was good. The crop progressed well up to the 3rd week of December, when untimely showers, accompanied by cold, easterly winds induced deflowering and debolling with a consequence of lean yields per acre.

(4) Prior to the commencement of the present scheme, the Bombay Department of Agriculture had evolved Gadag No.I, by straightforward selection, in the local Dharwar-American variety. Gadag No.I is superior to the Dharwar-American variety, in yield, ginning % and other economic characters, including spinning performance. To achieve further improvement, in resistance to red-leaf-blight, ginning ~~%xxxixidxxxnxxxxxxxxx~~ percentage, yield and quality, a cross was made between Gadag I and Co_2. This cross gave rise to several, promising cultures from the 9th, 4th and 12th families. Reciprocal crosses between 9-7-6-6 & Peruvianum were made in 1940-'41.

Selected individuals, from the several interspecific crosses and back-crosses made on the Surat Farm were being tested.

All this material was transferred to the Scheme at Gadag in 1942-'43.

(5) During 1942-'43, a large scale, replicated field trial, with with the bulks of promising sub-cultures ~~xfx%xixxx%xx~~ from 9-7-6-6 and 4-4-1-1 (derivatives of G I x Co_2 cross) was layed out, Gadag No.I serving as check. Gadag No.I has given the highest yield of kapas, and 9-7-6-6 the least, with 4-4-1-1 in between the two. All the three strains, differ significantly in yield from one another.

In earliness, 9-7-6-6 is decidedly later than either G I or 4-4-1-1.

As regards ginning %, 9-7-6-6 gins 36·8 against 32·5 and 34·7 of Gadag I and 4-4-1-1 respectively. In staple length, all are practically on the same level.

This experiment would be repeated next year.

6) Five promising progenies of each of the fourteen families derived from the cross G I x Co_2 were tested in two Compact-Family-Blocks, with G I & Co_2 as checks. ~~Thxxxxxxxxxxxxxxxxxx~~ In addition to these 22 progenies of the cross G I x Co_2 having desirable combinations of characters were tested, in replicated progeny row-trial, with G I & Co_2 serving as checks. There are significant differences with regard to germination, stand, earliness, yield, and ginning percentage, between families, and, in some cases, within the progenies of the families. But none of the families or the progenies of the families is superior in yield to G I. With regard to ginning % only some of the families have given higher values to G I. Selected individuals from the progenies of the best of the families would be tested further next year.

(7) From the synthetic material tested from the interspecific and back-crosses made on the Surat Farm, several individuals have been selected for further trial. On the whole, none of this material possesses all the desirable characters combinations. Some of the derivates give very high values for either ginning or staple but they either do not go hand in hand, or, lack earliness, yielding capacity, and resistance to red-leaf-blight.

(8) The F2 generation of the reciprocal crosses between 9-7-6-6 and Peruvianum was tested. Promimsing individuals from these would be put under replication next year.

(9) The following new crosses- (i) G I x Co2 (ii) G I x 9-7 (iii) G I x 4-1 (iv) 4-1 x 9-7 (v) G I x Co3 (vi) G I x Co4 and their reciprocals have been made. The F1 of these crosses would be tested next year.

Cotton Breeder, S.M.C.
Dharwar.

----------o----------

Dy. Director of Agriculture,
S. D., Dharwar.

Dharwar-American Cotton Improvement Scheme at Gadag (Bombay-Karnatak). Progress Report for 1942-'43.

I Financial aspect:-

(a) Date of sanction of scheme ---------- 8-4-1942.
(b) Date of commencement of the scheme---------- 4-4-1942.
(c) Period for which the scheme is sanctioned---5 years.
(d) Cotton area to which the results of the scheme would be applicable ---------- 2,75,000 acres.
(e) Amounts sanctioned for 1942-'43:-
By the I.C.C.C. ----------Rs.3267/-
By the Bombay Government ----------Rs. 415/-
~~(f) Actual expenditure during 1942-'43:-~~ Total Rs.3682/-
(f) Actual expenditure during 1942-'43:- 3204-14-11
From the grants of the I.C.C.C.---------- Rs. ~~3267/-~~
" " " " the Bombay Government--- Rs. 415/-0-0
Total Rs. ~~3682/-~~ 3619-14-11

II By the middle of the 19th century, attempts were made to introduce New Orleans and other trade varieties of American Cottons in the Bombay-Karnatak. This attempt, though abortive in the main, has left a legacy of a tract, with Gadag and Ron talukas of the Dharwar District as it's nuclei, wherein the acclimatised medley of American Cottons-locally known as the Dharwar-American Cotton variety-is predominantly being grown. Roughly, an average, an annual acreage of 3 lakhs of acres are being cropped with G.Hirsutum.

(2) By straight forward selection in the local Dharwar-American variety, an improved type, known as Gadag No.I was evolved. It is superior to the Dharwar-Amercan variety in every respect, and, the seed of it is being distributed in the tract.

(3) To improve upon G I, it was crossed with Co_2. Two promising segregates-9-7-6-6 and 4-4-1-1 have been obtained and are undergoing the process of further selection and purification.

(4) In 1940-'41 a cross was made between x 9-7-6-6 (outcome of G I x Co_2) and Peruvianum. This material also being exploited.

(5) Exploitation of the synthetic material from the interspecific crosses and back-crosses made at the Surat Farm, is also underway.

(6) Prior to the commencement of this scheme, of which this is the first report, botanical work for the improvement of the Dharwar-American Cotton, mentioned above, was done by the Department of Agriculture, Bombay Province.

III Object of the scheme is to evolve a type, either by selection or hybridization, superior in yield, staple, ginning %, and other economic characters to Gadag No.I. It should be earlier than G I and fully resistant to red-leaf-blight.

IV Season:- The total rainfall, during the year under report, was 18 inches and 33 cents, a figure below the average by about 4 inches. The distribution was also very uneven and faulty. Annually Cotton is drilled by the middle of Sept--ember. But this year, for want of sufficient soil moisture, sowing of cotton had to be delayed to the 1st week of Octo--ber. Germination was good. There was a fall of 1 inch in November which gave added vigour to the cotton crop. By the end of November cotton crop began to flower and came to full bloom by the 3rd week of December. But the untimely rains , accompanied by cold, unfavourable winds, brought about deflowering and debolling. Up to the middle of January 1943 there was a complete senesence of the crop, after which it recovered from the shock and began to

the harvest, this year, was very low. On the whole, season was below normal. Fortunately there was no incidence of red-leaf-blight.

V Randomised Replicated Progeny tests in Compact Family Blocks:

These tests were carried out in two experiments of 8 and 10 replications respectively. In the first experiment there were five progenies of each of the six families derived from the cross G I x Co2 with G I and Co2 families as checks. In the second experiment, there were eight families from G I x Co2 cross (each family consisting of 5 progenies) with a family of G I and another Co2 serving as checks. In the first experiment the block size was 30' x 28', each sub-plot measuring 5' x 2'. In the second experiment the block size was 30' x 35', each sub-plot measuring 5' x 2'.

(1) Experiment with 8 families inluding checks:-

(a) The mean performance of each of the families including checks, with regard to germination %, stand at maturity, earliness as measured by the percentage of total produce picked in the first two pickings, crude and adjusted yields is tabulated on table No. I. (attached in the end). As regards germination, all the families, including checks are on the same level. In final stand family 9-1-11 is significantly superior to the rest of the families, indicating that it has suffered the least from mortality. With regard to crude and adjusted yields, there exist significant differences between families. But the 9-3-11 family, though topping the list is on the same level with G I check. There is very little difference with regard to staple length; but in ginning %, 9-3-11 and 9-5-11 families show distinct superiority to G I. Taking in to consideration all the above mentioned characters 9-3-11 and 9-2-11 seem to be the most promising.

(b) Within family analysis conducted to earmark the best of the progenies (Please vide table No. 2) shows:-

(i) in germination, progenies of the families 9-4-11 and 9-6-11 differ significantly from one another, thereby proving them responsive to further selection for that character.

(ii) in earliness, progeny 14 of 9-3-11 family is significantly early. Also progenies of 9-6-11 show significant differences amongst themselves.

(iii) in yield there are no significant differences. These facts indicate that a high degree of uniformity has been attained with regard to yield. Further selection for earliness in the progenies of 9-3-11 family is possible. Progeny 6 of 9-5-11; 8 of 9-6-11; 8 and 14 of 9-3-11 and 4 and 6 of 9-4-11 are promising. The best of the individuals selected from these progenies would be tested next year.

(2) Experiment No. 2, with 10 familes:-

(a) The mean performance of each of the families, including checks, regarding germination, final stand, crude and adjusted yields, earliness is tabulated in table No. 3.

(i) With regard to germination and final stand, significant differences exist amongst the families, but the best of the families from the cross under study are only at par with G I.

(ii) Six families derived from the cross G I x Co2 are equal in earliness to G I. The remaining two are significantly later then G I.

(iii) In crude, as well as, adjusted yields no significant difference exists between the families of the cross and the checks.

(iv) The best of the families are only equal to G I in staple

length. But the families ~~ex~~ 9-11, 9-10, 9-13 and 9-9 show distinct superiority in ginning % over G I.

(b) The results of the " within family " analysis are tabulated in Table No.4.

(i) In germination, progenies from 9-13, 9-10, 9-12 and 9-11 would yield to further selections, as amongst them significant differences exist.

(ii) Response to further selection for earliness is only possible in the progenies of 9-9 and 4-2.

(iii) Selection for yield would be possible in the progenies of 9-9.

Taking in to consideration all the facts, mentioned above, families 9-9, 9-10, 9-11 and 9-13 seem to be the most promising.

Progenies 56 of 4-1; 4 and 38 of 4-2; 49 of 9-8; 17 and 19 of 9-9; 44 and 62 of 9-10; 52 and 37 of 9-11; 8 of 9-12 and 41, 2 and 27 of 9-13 are promising.

Best of the individuals selected from these families and their progenies would be studied next year.

VI Replicated row trial of 22 single plant progenies:-

17 individuals from the 9-7-6-6 bulk, 2 from 4-4-1-1 and 3 from 12-1 were tested in a replicated progeny row trial with G I and Co2 as controls. All the selected individuals were derived from the cross G I x Co2. The results of the trial are given in Table No.5.

(i) In germination and stand 5,6 and 11 derived from 9-7-6-6 are promising.

(ii) Progeny Nos. 4,14 & 10 derived from 9-7-6-6, 18 and 19 derived from 4-4-1-1 and 20 and 21 from 12-1 are promising, with regard to early maturity.

(iii) In yield progeny 6 and 19 derived from 9-7-6-6 and 4-4-1-1 respectively are the best. Progenies 13, 11, 1, 12, 5, 8, 16 derived from 9-7-6-6 and 22 from 12-1 are also promising.

(iv) Most of the promising progenies with regard to yield are equal in staple length with G I and all of them are distinctly superior in ginning %.

The best of the individuals, selected from the best of the progenies would be tested next year.

VII Bulks from the promising progenies of 9-7-6-6 and 4-4-1-1 were tested for yield and quality, on field scale, in a replicated, randomised experiment, with G I as control. Each replication consisted of 6 rows, each sub-plot measuring 12' x 90'. Each variety was replicated five times. The results are summarised in Table No.6.

(i) All the three varieties differ significantly in yield from one another; G I giving the highest yield.

(ii) In earliness G I and 4-4-1-1 are equal; 9-7-6-6 being significantly later than both of them.

(iii) In staple, 9-7-6-6, G I and 4-4-1-1 stand in order of merit.

(iv) In ginning %, 9-7-6-6 and 4-4-1-1 show decided superiority over G I.

The experiment would be repeated next year.

VIII Study of interspecific crosses and back-crosses - - - material received from Surat Farm:-

At the time of the starting of this scheme, there were 100 selected individuals and 57 bulks on hand. The selected individuals were 4 from B.C.22 x Maraad, 48 from B.C.22, 45 from B.C.68 and 3 from B.C.22 x sea Island. In addition to these, synthetic material from 10 more crosses was received during the year. All this material was tested in duplicate row tests.

suitable growth habit, earliness, apparent yielding capacity 226 individuals have been selected. The laboratory data, regarding, staple, ginning % etc is as yet under compilation. But the data, available at present, roughly indicates:-

(i) Derivatives from B.C.22 are finer in staple, but lower in yield and ginning. The earliest of them are later than G I in flowering and maturity.

(ii) Derivatives from B.C.68, especially sub-cultures 3, 5, 4 & 7 are equal to G I in earliness, higher to G I in yield and ginning, but coarser in fibre and inferior in lint colour-most of them being tinged with varying tints of "Khaki"

(iii) Cultures from B.C.22 x Maraad are finer than B.C.22 But are later in maturity.

(iv) From the fresh material received this year B.C.125 x Co2 seems promising.

IX Study of 9-7-6-6 x Peruvianum:- F2 of this cross was grown. On the basis of the desirable field characters 59 plants were selected. Out of them only 20 individuals show combinations of all the desirable, economic characters- They will be tested in F3 in replication with G I, 9-7-6-6 as checks.

X Fresh hybridization work:- With a view to combine all the desirable characters the following fresh crosses and their reciprocals were made:-

(i) G I x 9-7-6-6 (ii) G I x 4-4-1-1 (iii) 4-4-1-1 x 9-7-6-6 (iv) G I x Co2 (v) G I x Co3 (vi) G I x Co4 (vii) Co2 x 9-7-6-6 (viii) Co2 x 4-4-1-1

The F1 of these crosses will be grown in replications with the parents as controls, during 1943-'44.

-------v------

Proposed Programme of work for 1943-'44.

(1) Testing the most promising progenies from the best of the families derived from the cross G I x Co2, in Compact family blocks with G I and Co2 as controls.

(2) Testing for yield and other economic characters the bulks of the most promising families from 9-7-6-6 and 4-4-1-1 with G I as control in randomised blocks.

(3) Trial and exploitation of the synthetic material from inter--specific crosses and back-crosses made at Surat.

(4) Study of F3 of 9-7-6-6 x Peruvianum.

(5) Study of the F1 of the eight fresh crosses made.

---------c---------

Cotton Breeder
S. R. S., Dharwar

Dy. Director of Agriculture,
S. D., Dharwar.

Summary of analysis-8 Families.

Particulars	Sig diff	Between families.						
1. Germination percentage.	8.3	9-1-11	Co2	G I	9-5-11	9-6-11	9-4-11	9-3-11	9-2-11
		86.6	86.0	83.8	83.2	80.8	80.2	79.8	79.0
2. Stand at maturity.	1.3	9-1-11	Co2	9-5-11	9-4-11	G I	9-6-11	9-3-11	9-2-11
		24.1	22.4	22.4	22.3	22.3	22.0	22.0	21.8
3. Earliness.	64.2	9-3-11	9-5-11	9-2-11	9-4-11	G I	Co2	9-6-11	9-1-11
		424.5	414.5	403.8	395.3	390.0	386.3	380.3	342.5
4. Crude yield.	17.1	9-3-11	G I	9-2-11	9-1-11	Co2	9-6-11	9-4-11	9-5-11
		126.8	121.0	119.4	118.4	116.8	115.6	107.5	94.0
5. Adjusted yield.	15.2	9-3-11	G I	9-2-11	Co2	9-6-11	9-1-11	9-4-11	9-5-11
		124.9	121.6	121.6	116.8	116.2	108.6	108.1	95.2
6. Staple length(mms)		9-3-11	9-6-11	9-2-11	9-4-11	G I	9-1-11	9-5-11	Co2
		22.8	21.7	21.6	21.5	21.3	20.9	20.8	20.4
7. Ginning percentage.		Co2	9-5-11	9-3-11	9-1-11	9-2-11	9-6-11	9-4-11	G I
		39.1	37.8	36.2	35.8	35.6	35.2	34.8	33.4

Table II (To come opposite page 2) Within family analysis.

Family 9-3-11.

No.	Particulars	Sig. diff.	Between progenies				
1.	Germination count.	1.3	5	14	12	8	9
			8.4	8.4	7.9	7.6	7.5
2.	Final stand.	.78	5	14	8	12	9
			4.8	4.8	4.6	4.1	3.8
3.	Earliness.	12.8	14	9	5	8	12
			75.0	70.3	69.8	64.4	60.1
4.	Crude yield.	9.4	8	14	5	12	9
			28.3	28.3	26.8	24.3	19.3

Family 9-4-11.

1	Germination count.	.71	4	11a	14	11	6
			8.5	8.5	8.0	7.6	7.4
2.	Final stand	.39	14	4	11	11a	6
			4.6	4.6	4.5	4.4	4.2
3.	Earliness.	17.3	4	6	11	11a	14
			66.8	65.8	62.1	60.9	60.6
4.	Crude yield.	7.0	4	6	11a	11	14
			24.9	21.8	21.4	20.0	19.5

Table II (contd- (To come opposite page 2)

Family 9-5-11

No.	Particulars	Sig.	Between progenies				
1.	Germination count	1.34	3/8.8	7/8.5	8/8.4	11/8.4	6/7.6
2.	Final stand	.66	7/4.9	3/4.8	8/4.5	11/4.4	6/4.2
3.	Earliness	16.9	8/70.4	6/66.6	3/65.3	7/64.9	11/64.3
4.	Crude yield	5.9	6/21.1	11/19.9	3/19.5	8/18.4	7/15.3

Family 9-6-11

1.	Germination count	1.38	8/8.9	14/8.8	11/8.5	5/7.6	7/6.9
2.	Final stand	.66	14/4.8	5/4.4	8/4.4	11/4.3	7/4.3
3.	Earliness	15.1	14/68.1	11/67.6	5/59.6	8/58.2	7/50.5
4.	Crude yield	12.1	8/30.3	14/25.8	5/21.9	7/19.9	11/19.1

No.	Particulars	Sig diff	Between families.									
1.	Germination count.	3.3	Co2 39.4	9-10 38.1	G I 37.8	9-9 36.7	9-13 33.6	4-1 33.2	4-2 32.9	9-11 31.6	9-12 31.6	9-8 30.6
2.	Final stand.	1.9	Co2 21.8	9-10 21.5	9-9 21.1	4-2 19.9	G I 19.9	9-12 19.5	9-13 19.0	4-1 18.9	9-11 18.7	9-8 17.9
3.	Earliness.	45.5	G I 430.5	Co2 413.0	9-10 410.4	9-12 408.0	4-1 401.8	9-9 398.7	4-2 391.3	9-13 387.8	9-11 374.2	9-8 360.0
4.	Crude yield.	14.2	9-9 102.0	G I 96.5	9-13 96.5	9-10 93.7	Co2 93.8	9-11 92.2	4-2 91.4	9-8 88.6	9-12 87.2	4-1 80.8
5.	Adjusted yield	6.7	9-9 99.4	9-13 98.1	9-10 97.1	G I 96.7	9-11 94.4	9-8 92.4	4-2 91.2	9-12 88.2	Co2 84.8	4-1 82.6
6.	Staple length (mms)		9-11 21.0	9-13 20.9	9-8 20.9	G I 20.7	9-9 20.4	9-12 20.2	9-10 20.1	4-2 19.8	Co2 19.7	4-1 19.2
7.	Ginning percentage.		Co2 39.1	9-11 37.0	9-10 36.4	9-13 35.4	9-9 35.4	9-8 34.8	4-2 34.5	9-12 34.2	4-1 33.7	G I 33.7

Table IV (To come opposite page 3)
Within Family analysis.

No.	Particulars	Sig. diff.	Between progenies.				
			Family 4-1				
1.	Germination count.	.34	23 7.6	56 7.5	37 6.8	73 5.9	14 5.4
2.	Final stand	1.02	23 4.2	56 4.0	73 3.7	14 3.6	33 3.4
3.	Earliness.	19.5	56 87.0	33 85.5	73 79.0	23 76.6	14 73.0
4.	Crude yield.	8.9	56 19.2	23 17.8	73 16.6	14 15.0	33 12.2
			Family 4-2-				
1.	Germination count.	.48	4 7.4	38 7.0	34 6.4	57 6.1	38 6.0
2.	Final stand	.85	34 4.3	38 4.3	4 4.2	41 3.8	57 3.5
3.	Earliness.	6.5	41 87.1	4 83.1	34 77.2	57 72.1	38 71.8
4.	Crude yield.	7.7	34 23.2	4 19.7	38 17.5	41 17.0	57 14.0

No.	Particulars	Sig. diff	Within families				
			Family 9-8				
1.	Germination count.	1.49	29 / 7.4	42 / 7.2	49 / 5.6	62 / 5.2	71 / 5.2
2.	Final stand	.97	29 / 4.0	42 / 3.6	49 / 3.6	71 / 3.4	62 / 3.3
3.	Earliness.	29.5	62 / 77.3	29 / 73.8	42 / 71.8	49 / 70.9	71 / 66.2
4.	Crude yield.	3.0	71 / 19.4	49 / 18.6	29 / 18.3	42 / 16.7	62 / 15.6
			Family 9-9				
1.	Germination count	1.1	17 / 8.4	2 / 7.5	19 / 7.3	3 / 7.0	28 / 6.5
2.	Final stand	.59	17 / 4.7	3 / 4.2	2 / 4.1	19 / 4.1	28 / 4.0
3.	Earliness	10.0	19 / 84.4	3 / 81.6	2 / 80.9	17 / 77.9	28 / 73.9
4.	Yield	8.9	17 / 27.6	19 / 20.5	28 / 20.2	3 / 19.3	2 / 14.4
			Family 9-~~10~~ -11				
1.	Germination count	2.8	52 / 6.6	37 / 6.5	11 / 6.5	10 / 6.4	35 / 5.6
2.	Final stand	.83	52 / 4.2	37 / 3.7	10 / 3.7	35 / 3.6	11 / 3.5
3.	Earliness	8.3	37 / 86.2	35 / 81.7	11 / 72.7	10 / 81.0	52 / 63.3
4.	Yield	8.2	10 / 20.5	11 / 18.9	37 / 18.6	35 / 17.8	52 / 16.4
			Family 9-10				
1.	Germination count	1.4	44 / 8.3	17 / 8.1	45 / 7.8	44 / 7.0	17 / 6.9
2.	Final stand	.83	44 / 4.7	17 / 4.6	45 / 4.5	59 / 3.9	62 / 3.8
3.	Earliness	14.8	62 / 86.7	59 / 83.5	45 / 81.4	44 / 80.3	17 / 78.5
4.	Yield	8.1	62 / 20.6	45 / 19.4	17 / 18.7	44 / 17.4	59 / 17.4

Table IV (contd) (To come opposite page 3)

Particulars	Sig. Diff	Between Families.				
		Family 9-12.				
Germination count.	1.3	8 / 7.1	19 / 6.6	20 / 6.3	39 / 5.9	24 / 5.7
Final stand.	1.02	8 / 4.1	19 / 4.0	39 / 3.9	20 / 3.8	24 / 3.5
Crude yield.	7.7	8 / 19.8	20 / 19.2	19 / 17.1	24 / 16.1	39 / 15.0
Earliness.	15.4	8 / 89.0	20 / 83.3	19 / 80.8	39 / 79.2	24 / 75.1
		Family 9-13.				
Germination count.	1.6	2 / 7.6	35 / 7.1	54 / 6.6	41 / 6.2	27 / 6.1
Final stand.	10.0	2 / 4.1	35 / 3.9	27 / 3.8	41 / 3.7	54 / 3.5
Earliness.	12.5	27 / 89.3	2 / 76.6	54 / 75.1	35 / 74.7	41 / 72.1
Crude yield.	8.2	41 / 21.4	2 / 20.9	27 / 20.7	35 / 19.3	54 / 14.2

-------s-------

Summary of results of 22 progenies. Table V. (To come opposite page 3)

No.	Particulars	Sig. diff.	Between progenies-order of merit																							
1.	Germination count	1.4	5 / 8.5	6 / 8.5	3 / 8.2	11 / 7.6	22 / 7.5	12 / 7.4	1 / 7.4	16 / 7.4	17 / 7.4	20 / 7.4	C-I / 7.4	15 / 7.3	2 / 7.3	8 / 7.2	7 / 7.1	9 / 7.1	10 / 7.0	19 / 7.0	21 / 7.0	18 / 6.9	Co2 / 6.9	13 / 6.8	8 / 6.3	14 / 5.[illegible]
2.	Crude yield	32.1	6 / 116	19 / 97	CI / 97	16 / 94	22 / 94	3 / 92	5 / 90	12 / 89	1 / 86	11 / 84	15 / 84	7 / 79	2 / 79	17 / 75	21 / 70	18 / 76	20 / 75	10 / 75	4 / 72	5 / 70	9 / 68	3 / 64	15 / 54	14 / 51
3.	Staple length (mm)		12 / 21.5	16 / 21.5	4 / 21.5	21 / 21.4	7 / 21.3	3 / 21.1	14 / 21.1	1 / 20.9	9 / 20.8	12 / 20.8	5 / 20.6	17 / 20.6	64 / 20.6	6 / 20.6	2 / 20.5	22 / 20.4	11 / 21.3	10 / 20.2	19 / 19.6	18 / 18.3	20 / 17.5	[illegible] / 15.3	10 / 12.4	2[illegible] / 1[illegible]
4.	Ginning percentage		8 / 39.8	13 / 38.6	1 / 37.8	2 / 37.6	15 / 37.4	10 / 37.4	16 / 36.8	17 / 36.6	9 / 36.5	11 / 36.3	22 / 36.1	3 / 36.1	14 / 35.8	20 / 35.6	12 / 35.3	21 / 35.1	5 / 34.9	19 / 34.6	6 / 34.2	18 / 33.6	4 / 33.3	23 / 33.3	24 / 33.1	7 / 32
5.	Earliness	8.5	4 / 84	14 / 83	16 / 83	19 / 81	18 / 81	10 / 80	20 / 76	21 / 76	co2 / 75	11 / 75	CI / 75	17 / 74	12 / 74	2 / 73	3 / 73	1 / 70	9 / 67	6 / 66	15 / 65	7 / 64	5 / 64	22 / 62	8 / 62	13 / 6[illegible]
6.	Final stand	2.3	6 / 11	5 / 11	4 / 11	11 / 10	20 / 9.8	12 / 9.8	19 / 9.7	1 / 9.5	16 / 9.5	8 / 9.5	13 / 9.5	18 / 9.3	Co2 / 9.1	7 / 9.1	10 / 9.1	17 / 9.1	9 / 9.0	22 / 9.0	21 / 8.6	3 / 8.7	CI / 8.5	2 / 8.3	15 / 7.6	14 / 6

(To come opposite page) 3)

Table VI.

Summary of results of large scale yield trial

No.	Particulars	Sig Diff	Between Varieties		
1.	Yield -lbs	8.0	0-1 102.8	4-4-1-1 92.6	9-7-6-6 81.6
2.	Earliness	7.5	0-1 68.0	4-4-1-1 68.0	9-7-6-6 56.0
3.	Staple-length (mms)		0-1 21.0	4-4-1-1 20.8	9-7-6-6 22.6
	Ginning percentage		0-1 32.5	4-4-1-1 34.7	9-7-6-6 36.8

101

Form B. Year 1942-'43.

Breeder's aim:-

1. Name of the commercial type to be improved-Dharwar-American cotton known locally as " Vilayati ".
2. Source of breeding material- G-1, a unit selection from the local Dharwar-American ~~xxxx~~ cotton and two individual plant selections namely 9-7-6-6 and 4-4-1-1 from the hybridised material viz G-1 x Co2.
3. Staple length giving the limits of variation:-

Particulars.	Name of commercial types. G-I	9-7-6-6	4-4-1-1
Staple length (mms.)	21.5 (19.3-22.3)	22.6 (21.0-23.5)	20.6 (19.3-21.0)
4. Ginning percentage	32.5 (30.5-33.6)	36.8 (35.0-40.0)	34.7 (33.3-35.9)
5. Spinning value.	41's (37's-42's)	38's (37's-38's)	41's (38's-46's)

6. Main lines of breeding by hybridization and selection in inter varietal crosses.
7. Aim is to get an early type superior to ~~xxxxxxx~~ G-I in resistance to red-leaf-blight.
8. - - -.
9. - - -.
10. This ~~being~~ is the first year under report.
11. ------.

Form C

Accompany proposals for:-1942-'43.
(iii) Progress report on breeding scheme.

1. Method of lay out:- Randomized lay out with 3 varieties viz- G-I, 9-7-6-[illegible], 4-4-1-1, in 5 blocks. Each plot is to have six rows of each variety. Plot size 12' x 90'. Block size 36' x

Major Field tests 1942-'43.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Name of commercial or new type.	Name of type used as control.	No. of years included in these tests.	Period of picking.	Average acre yield (Kamas) in lbs. Previous years picking.	Last year.	To date 1942-'43	% of increase over control.	Statistical sig. of increased yield.	Average staple length-(mms.)	Average ginning percentage.	Maximum warp counts if known.	Average acre cash value (Kamas).	Reserved equilibrium [illegible]	Susceptibility or resistance to major [illegible]	Remarks.
New types evolved out of cross between G-IxCo2 9-7-6-6 and 4-4-1-1	Gadag-I	Year First under trial.	From 9-2-1943 to 24-3-'43. Six pickings in all.	G-I	-	246	-	-	21.9 mms.	32.5	41's		Sensor on the whole was unfavourable to cotton-market by low yields. There was an incidence of red-leaf-blight.		
				9-7-6-6	-	209	xx-15.4	-	22.6	36.5	38's				
				4-4-1-1	-	232	-5.7	-	20.6	34.7	41's				

* Columns 10 & 12 as determined by the Director, Technological laboratories, Katunga.
* Column 11-G.P. to be taken henceforth on roller gins in units not less than 10 lbs.

No. S-36-K-15-14862 of 1943. R+S 105

From The Director of Agriculture, B.P., Poona.

To The Secretary, Indian Central Cotton Committee, Bombay.

Poona, 26 June, 1943.

Subject:- Progress Report for 1942-43.
Dharwar-American Cotton Improvement Scheme, Gadag.

Sir,

In continuation of my letter No. S-36-K, dated 8-6-1943 on the above subject, I have the honour to forward herewith a revised progre report for 1942-43 of the Dharwar American Cotton Improvement Scheme, Gadag, for consideration at the forthcoming meeting of the Indian Central Cotton Committee to be held in July, 1943.

2. A copy of the revised report is being sent to Government, Revenue Department, Bombay.

Your obedient servant,

Sd./- H.M. Desai,

For Director of Agriculture.

REVENUE DEPARTMENT
No. 5920/39
28. JUN. 1943
No. 11(Dgn)/19062

DNS/20.6.

No. S-36-K-15-14862 of 1943. Poona, 26 June, 1943.

Copy with copies of the revised progress report and letter No. S-36-K, dated 8-6-1943 to the Secretary, Indian Central Cotton Committee, Bombay, referred to above, forwarded with compliments to the Secretary to Government, Revenue Department, Bombay, for informatio

H. [signature]

For Director of Agriculture.

R.D. 214

As a copy of the Progress Report has been sent by the Dir. of Agre to the Secy, I.C.A.R direct no further action is called for. This may, therefore, be filed

LK
8.7.43

DAL
8.7.43

(Is it not usual to submit such reports for information to A(f), for who is a member of the governing body of the Council?

DAL
8.7.43

J.A.S.

Submitted with ref. to the J.A. Secy's query, dated 8.7.43. Usually ~~sm~~ Progress Reports are forwarded by the Dir. of Agre to the I.C.C.C. through Govt. Formerly Govt. has forwarded such reports to the I.C.C.C. on their receipt from the Dir. This time the Dir. has sent them direct. It will be seen from file 7781 XIII (a) that ~~such reports~~ it is not usual to submit such reports for information to A(f).

LK
9.7.43

Very well.
DAL

J.A.S.

Supt
File
LK
9/7

Copy of this officer letter No.S-36-1 of 9th June, 1943, addressed to the Secretary, Indian Central Cotton Committee, Bombay,

---

Subject:- Progress Report for 1942-43 of the Scheme for Improvement of Dharwar-American Cotton.

In continuation of my letter No.S-36-1, dated 23-5-1943 on the above subject, I have the honour to request you to cancel the Progress Report for 1942-43 of the scheme for improvement of Dharwar-American Cotton. A revised report will be submitted shortly.

Dharwar-American Cotton Improvement Scheme,
Gadag, (Bombay-Karnatak).

Progress Report (1942-43).

I. Preliminary Data:-

(a) Date of sanction of the scheme .....8-4-1942.
(b) Date of commencement of the scheme.....4-4-1942.
(c) Period for which the scheme is sanctioned:-.5 years.
(d) Cotton area to which the results of the scheme would be applicable..... 2,75,000 acres.

(e) Amounts sanctioned for 1942-43:-

By the I.C.C.C.....	Rs.	3267/-
By the Bombay Government.....	"	415/-
Total	Rs.	3682/-

(f) Actual expenditure during 1942-43:-

From the grants of the I.C.C.C.....	Rs.	3204-14-11
From the grants of the Bombay Govt:..	"	415- 0- 0
Total	Rs.	3619-14-11

II. Programme for 1942-43:-

(1) Comparison of two strains, 9766 & 4411 (from Gadag-1 x Co2 cross) with Gadag-1,

(2) Comparison of secondary selections from 9766 & 4411 strains.

(3) Selections from interspecific material from Surat.

III. Summary:-

At present a previously obtained strain, Gadag-1 is available. This strain is better than local in various respects. For further betterment it was crossed with Co2, an American cotton from Madras. From this cross very promising families are on hand. These are being tested on field-scale.

IV.. Experimental Results (1942-43):-

Introductory:- At the middle of the 19th century Orleans ~~and other trade varieties of American~~ attempts were made to introduce New Orleans and other trade varieties of American cottons in the Bombay-Karnatak. These attempts on the whole proved a failure, but a part of Bombay-Karnatak, Gadag and Ron talukas of the Dharwar district, adopted a mixture of American cottons. The acclimatized American cotton now covers an area averaging annually about 3,00,000 acres.

The Department of Agriculture, Bombay, has devoted considerable attention to the improvement of both herbaceum and hirsutum cottons in the Bombay-Karnatak. As a result a popular improved strain of localized American cotton Gadag-1 is now grown extensively. Gadag-1 is superior to acclimatized Dharwar-American cotton in yield, ginning and fibre qualities. It suffers less from red-leaf blight than the local Dharwar-American cotton. There is, however, still considerable scope to improve the local cotton in yield, ginning and staple length.

Experimental

(1) A large scale replicated field trial with two synthetic strains 9766 and 4411 along with Gadag-1 was conducted during the year. Gadag-1 surpassed both the synthetic strains in yield. The strain, 9766, however was late and showed a

ginning of 36.8 per cent in contrast to 32.5 of Gadag-1 and 34.7 of 4411. The experiment would be continued.

(2) Additional material consisting of 36 families from the cross Gadag-1 x Co2 were replicated in rows. Sub-cultures from various families indicated significant yield differences, period of maturity staple and ginning. The most promising material would be continued further.

(3) 9766 (Gadag-1 x Co2) x Peruvianum. The F_2 of this cross was grown during the year. Out of these 59 plants were selected in the fields, but only 20 were found to combine all the desirable characters. These will be replicated next season.

(4) Interspecific material:- Synthetic material involving various Indo-American strains was supplied by the Surat Farm. The material is very variable and inferior in many respects. However, it is yet too early to state definitely regarding the usefulness of this interspecific material.

(5) New Crosses:- With a view to recombine good qualities of Gadag-1 (earliness) and of its cultures 9766 and 4411 the three have been crossed with each other in various combinations.

V. Programme for 1943-44:-

(1) Comparison of best of the families from GI x Co2, in compact family blocks with Gadag-1 and Co2 as checks.

(2) Testing for yield and other economic characters the most promising secondary cultures from 9766 and 4411 with Gadag-1 as control.

(3) Trial of selections from interspecific material supplied by the Surat Farm.

(4) Study of F_3 of 9766 X Peruvianum.

(5) Study of F_1s of the new crosses.

Sd/-. S.G. Kelkar,
Cotton Breeder,
S.M.C., Dharwar.
Countersigned.

Countersigned.
B.S. Kadam
(B. S. Kadam.)
Dy. Director of Agriculture,
(Crop Research), B.P., Poona.

Sd/-. S.S. Salimath,
Dy. Director of Agriculture,
Northern Division, Surat.

113

To

The Secretary,
Indian Central Cotton Committee,
Bombay.

Subject:- Progress Report for 1943-44.
Dharwar-American Cotton Improvement Scheme, Gadag.

No.S-36-K-17120 of 1944. Poona, 21 June, 1944.

Sir,

With reference to your letter No.3757, dated 27-4-44, I have the honour to forward herewith the Progress Report for 1943-44 of Dharwar-American Cotton Improvement Scheme, Gadag, for consideration at the forthcoming meeting of the Indian Central Cotton Committee to be held in July 1944.

Your obedient servant,

Sd/- H.M.Desai,

For Director of Agriculture.

REVENUE DEPARTMENT
File No. 5920/39
22 JUN 1944
Serial No. J 18515

knm/21

Through - The Secretary to Government, R.D., Bombay,
(with a spare copy for the use of Government).

P.T.O.

No. 5920/39-18526-J.
Revenue Department.
Bombay Castle, 26th June 1944.

Forwarded to the Secretary, Indian Central Cotton Committee.

By order of the Governor of Bombay,

Assistant Secretary to the Government of Bombay,
Revenue Department.

OC+FC. 24-6-44

Issued 26/6/44

TLK
24-6

A. Preliminary data:-

(a) Date of sanction of the scheme ..... 8-4- 1942.

(b) Date of commencement of the scheme ..... 4-4- 1942.

(c) Period for which the scheme is sanctioned ... 5 years.

(d) Cotton ~~area~~ acreage to which the results of the scheme would be applicable ..... 2,75,000 acres.

(e) Amounts sanctioned for each year of the Scheme:-

	1942-43	1943-44	1944-45	1945-46	1946-47	Total
By the I.C.C.C.	Rs.5480	Rs.2814	Rs.2923	Rs.3032	Rs.3141	Rs.15,390
Deduct for receipts @ Rs.300/- per year						Rs. 1,500
						Rs.13,890
By the Govt.of Bombay	Rs. 330	Rs. 230	Rs. 230	Rs. 230	Rs. 230	Rs. 1,250

(f) Actual expenditure ..... 1942-43 1943-44.

	1942-43	1943-44.
From the grants of I.C.C.C....	3,204-14-11	3,184- 5-0
From the grants of the Bombay Government.	415- 0-0	490- 0-0
Total "	3,619-14-11	3,674- 5-0

(g) Date of termination of the scheme ..... 31-3-1947.

(h) Receipts credited to the I.C.C.C. in 1943-44. ..... Rs. 53[illegible]- 8-3

B. Approved Programme for 1943-44:-

(1) Comparison of two synthetic strains 9766 and 4411, from (Gadag-1 x Co.2) x Gadag-1.

(2) Comparison of secondary selections from strains 9766 and 4411.

(3) Comparison of improved types, obtained from other Indian Provinces with Gadag-1.

(4) Selection from interspecific material from Surat.

(5) Study of crosses and back-crosses.

C. Object of the scheme:-

The object of this scheme is to evolve a type superior to Gadag-1 in yield, ginning, staple length and resistance to red-leaf-blight.

D. ~~Popular summary:-~~ Brief resume of work done during the period under report:-

At present a previously obtained strain, Gadag-1 is availabl This strain is better than local in various respects. For further betterment it was crossed with Co.2, an American cotton from

mature. From this cross very promising

These are being tested on field-scale.

E. ~~Experimental results~~:- Report of work done during the period under report.

(1) This is the second year of this scheme. The season under report, was abnormal. It was characterised by very heavy rains with the consequence of a prolonged vegetative phase. Flowering and harvesting were delayed throughout the tract. At present, an improved type, Gadag-1 evolved by the Department of Agriculture, Bombay, is under distribution in the Dharwar-American cotton tract.

(2) The large scale replicated field trial, with two synthetic strains 9766 and 4411, derived from the cross (Gadag-1 x Co2) x Gadag-1 was repeated. Results are summarised below:-

Strain No.	9766	Gadag-1	4411
Yield of Kapas in lbs. per acre.	777	765	520
Ginning percentage.	36.6	31.4	33.3
Staple length in mm.	22.6	21.1	21.1

Contrary to last year's results strain 9766 has yielded equally well as Gadag-1, both of which significantly surpass 4411 in yield. Strain 9766 and 4411 have maintained their superiority over Gadag-1 in ginning this year also.

Lint samples of the three types (for 1943- season) were sent to the Technological Laboratory, Matunga, for spinning tests. Results obtained are tabulated below:-

Strain No.	9766	Gadag-1	4411.
Staple length in mms.	22.2	23.0	20.6
Fibre wt. per inch.	0.142	0.123	0.147
Suitable to spin H.S.W.C.	36's	34's	38's

(3) Of the 36 families from the cross (Gadag-1 x Co.2), under trial last year, 23 were replicated in rows with Gadag- and Co.2 as checks. Sub-cultures from various families indicated significant differences in yield, earliness, ginning and staple-length. The most promising material would be continued

exotic cotton types from varous provinces and from Indore and Hydrabad-Deccan were tested for yield and other economic characters along with Gadag-1, in a small scale replicated trial. Gadag-1 surpassed all of them in yield. However, some of the types were distinctly superior to Gadag-1, either in ginning or staple-length. L.S.S. was the earliest to mature, and it has been crossed with 9766 and Gadag-1. The trial will be repeated.

(5) The third back-cross generation (9766 x G. Barbadense) x 9766 B_3 was under study during the year. Out of the 20 plant-progenies tested along with Gadag-1 and 9766 in replicated rows, only five have given a combination of all the desirable characters. Comparative study of the selected material will be continued.

(6) Interspecific material:- Selected plants from the interspecific material were under observation along with Gadag-1. Only the desireble material would be continued.

(7) Study of F_1s:- The first generation of the crosses made in 1942-43, involving Gadag-1, 9766, 4411, Co.2, Co.3 and Co.4 in varous combinations was grown. Most of them have been back-crossed with the local parent.

(8) New Crosses:- With a view to combine earliness and yield with better ginning, staple and resistance to red-leaf-blight, additional crosses have been made involving Gadag-1 and L.S.S., 289 F/K-25 and 186 F from Punjab; M-4 and Indore-1 from Indore; Sindh-Sudhar from Sind; Parbhani-American from Hydrabad-Deccan; Buri 107 from the C.P., Perso-American from U.P. and MOCO, Jinjya and Kampala varieties. Next year they will be back-crossed with Gadag-1 and varous F_1s also would be inter crossed.

F. Proposed Programme for 1944-45:-

As per approved programme for 1943-44.

Sd/-. S.G. Kelkar.
Cotton Breeder, S.M.C., Dharwar

Countersigned.

B.S. Kadam
(B.S. Kadam.)
Dy. Director of Agriculture,
(Plan research

Sd/-. S.H. Prayag.
Dy. Director of Agriculture,
S.D., Dharwar

Letter.

To

The Secretary,
Indian Central Cotton Committee,
Bombay.

Subject:- Progress Report for 1944-45.

No.No.S-36-Q-15698 of 1945. Poona, 31st May, 1945.

Sir,

With reference to your letter No.4452 dated 16-4-45, I have the honour to forward herewith copies of the - progress reports for 1944-45 of the following schemes for consideration at the forthcoming meeting of the Indian Central Committee to be held in July next.

(1) Scheme for improvement of Dharwar-American Cotton
(2) Broach Cotton Breeding Scheme.
(3) Jalgaon Cotton Breeding Scheme

Your obedient servant,

D D Rege

For Director of Agriculture.

RECONSTRUCTION DEPT.
File No. 5920/39
4 JUN 1945
Serial No. 11691
J

~~THROUGH~~

The Secretary to Government, Reconstruction Department Bombay, (with a spare copy of each of the reports for the use of Governemt)

No. 5920/39+11691-J
R.C.D.
B.C. 8th June 1945

Forwarded to the Secretary, Indian Central Cotton Committee

By order of the Governor etc.

Assistant Secy. to Govt.
6.6.45.

ISSUED
Date 8/6/

121

Letter.

To,

The Secretary,
Indian Central Cotton Committee
Bombay.

Subject : Progress report for 1945-46.

No.S-36-G/18383 of 1946. Poona, 11 June, 1946.

Sir,

With reference to your letter No.4877 of 29-4-1946, I have the honour to forward herewith progress report for 1945-46 of the scheme for improvement of Dharwar-American Cotton for consideration at the forthcoming meeting of the Indian Central Cotton Committee to be held in July next.

Your obedient servant,

For Director of Agriculture.

Through

The Secretary to Government, Reconstruction Department, Bombay, (with a spare copy of the report for the use of Government).

A:11

P.T.O.

No.5920/39/18407-C.
Reconstruction Department.
Bombay Castle, 20 June 1946.

Forwarded to the Secretary, Indian Central Cotton Committee.

By order of the Governor of Bombay,

Assistant Secretary to the Government of Bombay, Reconstruction Department.

ISSUED

A. Preliminary data :-

(a) Date of sanction of the scheme ..... 8-4-1942.

(b) Date of commencement of the scheme ..... 4-4-1942.

(c) Period for which the scheme is sanctioned ..... 5 years.

(d) Cotton acreage to which the results of the -- scheme would be applicable..... 2,75,000 acres

(e) Amounts sanctioned for each year of the scheme by the Indian Central Cotton Committee :-

1942-43	1943-44	1944-45	1945-46	1946-47	Total
Rs 3480/-	Rs 2814/-	Rs 2923/-	Rs 3032/-	Rs 3141/-	Rs 15390/-

Deduct receipts at Rs 300/- per annum ..... Rs 1500/-
Rs 13890/-

By the Bombay Government :-

Rs 330/-	Rs 230/-	Rs 230/-	Rs 230/-	Rs 230/-	Rs 1250/-

(f) Actual expenditure from the grants of the Indian Central Cotton Committee, Bombay :-

1942-43	1943-44	1944-45	1945-46	~~1946~~
Rs 3204/14/11	Rs 3184/5/-	Rs 3598/7/-	Rs 4089/6/-	

From the grants of the Bombay Government :-

				~~Total~~
Rs 415/-	Rs 490/-	Rs 490/-	Rs 390/-	
Rs 3619/14/11	Rs 3674/5/-	Rs 4088/7/-	Rs 4479/6/-	

(g) Date of termination of the Scheme ..... 31-3-1947.

(h) Receipts creditted to the Indian Central Cotton Committee, Bombay in :-

1942-43	1943-44	1944-45	1945-46
Rs nil	Rs 532/8/3	Rs 834/0/3	Rs 629/6/3

B. Approved programme for 1945-46:-

(1) Comparison of two synthetic strains 9766 and 4411 from -- (Gadag-1 X Co2) with Gadag-1 as check.

(2) Comparison of the sub-selections from 9766 and 4411.

(3) Comparison of improved types brought over from other Indian -- Provinces with Gadag-1.

(4) Selection from the interspecific material from Surat.

(5) Study of crosses and back-crosses.

C. Object of the Scheme :- Evolution of a strain, by suitabl synthesis, superior to Gadag-1 in yield, ginning out-turn, staple length, spinning performance and resistance to red-leaf-blight.

D. Brief resume of work done during the period under report

further betterment it was crossed with Co2, an American cotton strain from Madras. Promising families isolated from this cross are being tested intensively. Additional synthetic material, created through selective hybridization, is also being exploited to the fullest extent.

E. Report of the work done during the year under report:-

(1) This is the fourth year of this scheme. The season, under report, was far from the normanl. Neither the total quantity of rain-fall (17.05") received nor the distribution of it was satisfactory. -- Showers received by the middle of September, facilitated timely sowing and excellent germination of the cotton crop. Absence of heavy rains in October kept the cotton crop free from red-leaf--blight; but the light drizzles received early, in November --- favoured the incidence of black-aphis. Dearth of soil moisture -- very much retarded the vegetative vigour with the consequence of stunted crop growth. The simultaneous blooming cotton and blowing of cold, easterly winds, gave rise to a very low setting percentage of bolls. On an average, only 3 to 5 bolls per plant were formed. Picking of cotton was commenced by the middle of February 1946; but the subsequent pickings were very much delayed due to sudden lowering in temperature. On the whole the season was very abnormal, and as a result of it, sub-normal yields were obtained.

(2) The large scale replicated field trial, with two synthetic strains, 9766 and 4411, derived from (Gadag-1 X Co2) and Gadag-1 as a control was repeated. The results are summarised below :-

Strain	4411	Gadag-1	9766	F obs.	F theo.
(1) Kapas yield per acre in lbs.	328.5	322.5	316.5	0.16	4.46 at 5%
(2) Ginning%	33.7	33.6	37.0	--	--
(3) Lint yield per acre in lbs.	110.7	108.36	117.1	--	--
(4) Staple length in m.m.	22.3	20.0	23.2	--	--
(5) Earliness	89.4	80.8	82.2	--	--

Although definite remarks can not be made as the experi--ment is not significant, it may be observed that contrary to the previous years' results, Gadag-1 also has yielded as much as the two strains, both of which, however, have kept up their --

of spinning tests of the 1945 season's produce received from the Technological Laboratory, Matunga are tabulated below :-

Strains	Gadag-1	9766	4411
Staple length in inches	13"/16	14"/16	15"/16
Fibre weight per inch.....	0.140	0.144	0.116
Suitable to spin H.S.F.C	34s	30s	30s
Neppiness.	Slightly neppy.	Slightly neppy.	Rather neppy.

(3) Of the ten families from (G-1 X Co2) tested last year, only two families Viz., 9-3 and 9-10, which had shown consistant superior performance during the last three years with regard to the most of the characters, were compared to Gadag-1, ~~and~~ 4411 and 9766, in -- replicated and randomised progeny rows. The results are tabulated below :-

Strains	9-3-2	9-3-1	9-3-3	9-10-15	9-10-17	Gadag-1	9-10-16	9-10-14	4411	9766	91018
Kapas yield per plot.	80.2	78.7	73.8	71.8	71.6	68.8	62.1	60.5	57.5	56.9	54.[illegible]

Observed F= 3.5 ; Theorotical F = 2.1 at 1% ; Cri.Dif.=20.8

Staple length	23.8	23.3	23.2	23.2	23.2	20.0	22.2	23.0	22.3	23.2	22.[illegible]
Ginning%	37.7	38.9	37.5	36.2	38.6	33.6	37.0	37.7	33.7	37.0	37.[illegible]

It is clear from the above data that although the family 9-3 stands statistically at par with Gadag-1, all the three of its plant -- progenies record ~~with~~ higher values for yield, ginning out-turn and staple length. The 9-3 family is also earlier. The trial will be -- repeated next year.

A small bulk trial of the same families, taken in five -- replications showed that all the three plant progenies from 9-3 and two (9-10-15 and 9-10-17) ~~from~~ 9-10 were distinctly superior in yield to Gadag-1 and 9766, and even at 1% level. In ginning percent staple length and earliness also 9-3 family, as a whole, is decid -ly superior. 89.8% of the total produce from 9-3 can be harvested in the first two pickings as compared to 84.8 from Gadag-1. This trial will be continued. Both these families (9-3 and 9-10) will be tested along with Gadag-1 in the cultivators' fields to study

The lint samples of these both families have been sent for spinning test during this season.

(4) Testing of improved inter-provincial material :- The same nine improved hirsutum types obtained from Bombay and other -- Provinces of India were compared with Gadag-1, 4411 and 9766 as controls for the second time, in a small scale randomised blocks. Layout with six replications. L.S.S. as usual, is the earliest. In yield, none of the inter-provincial strains have yielded equally well with Gadag-1 or 4411, although in ginning out-turns earliness and staple length some of these types are distinctly superior. Such of them have been already included as parents in hybridization.

(5) Inter-specific material :- Six, fresh promising selections, received from Surat during the season, and the best of the five cultures selected at Gadag in 1944-45, were compared to Gadag-1 in replicated progeny rows. In both crude and adjusted yields -- Gadag-1 tops the list; however two selections, one each from the old and new inter-specific materials, stand statistically at par with Gadag-1, both in crude and adjusted yields. The --- (BC 134 X Co2)F1 X Meade, though the most vigourous in growth has not yielded well. In earliness it is equal to Gadag-1. Another -- inter-specific culture, involving Armoneanum has thrwn out 15.3% khaki linted plants. With regard to the other economic characters, many show higher values than Gadag-1, but in none of them all the desirable characters have combined up to the requisite level.

In addition to the above material, ten individual selections received from Surat, when tested along with Gadag-1, recorded very much lower yields than that of Gadag-1. But three of these exhibit a combination of ginning out-turn and staple length, to the level of strain 9766. Testing of best of these cultures will continue.

(6) Study of F2s, F3s, B1s and B2s :- F2s of the crosses between Gadag-1 and ten inter-provincial, improved varieties were compared with Gadag-1. Of these, F2s involving 289F/K25, Perso-American, H-4, Kampala and Minjifa , have shown means above the selection -- level in all the four characters under study Viz., yield, earliness, staple length and ginning percentage. Of these ten crosses, eight were back-crossed to Gadag-1. In the B1s also back-crosses involving [illegible] given means above the selection

(Gadag-1 X 4F-98) a very low mean for earliness; in the remaining three characters it had means above the selection value.

When the same eight F1s were crossed to 4411-3 (a locally obtained synthetic strain known for its earliness) marked enhance--ment in earliness was noted in every case. But C1s, involving -- 186F/ 289F/K25, Perso-American and M-4 only exhibit means, in all the four characters above the selection level.

Hence selected individuals from the above mentioned F2s, B2s, and C1s, only would be studied further.

In addition to these, seelcted material from 18 F2s and 8 back-crosses were under study in their F3s and B2s respectively. Excepting Kampala, Jinja and the three Co varieties, most of the parental varieties used were locally evolved ones. As can be -- expected from the very nature of such synthetic material, only a few of them show means of all the requisite four characters -- approaching level fixed by the strains 9-3 or 9-10 from the cross (Gadag-1 X Co2). Thus selected individuals from these few F3s and B2s only will be studied further in detail.

(7) Inter-specific crosses made at Gadag :- Experience obtained by the study of Surat inter-specific material at Gadag, strongly indicates that success of such crosses would mainly depend upon the physiologic adaptibility of the parental strains, to the environmental complex of the tract where they are meant in the end, to thrive. To test the validity of such an indication crosses -- involving Gadag-1 and strain 93 from the hirsutum and Jayawant, K.F.T12-25 and 2368 from G.herbaceum have been made. The F1s of these will be grown and back-crossed in the next year.

F.Proposed programme for 1946-47 :- As per approved programme for 1945-46.

****

Cotton Breeder, S.M.C.,
Dharwar.

Countersigned

Deputy Director of Agriculture,
Crop Research, B.P.Poona-5

Deputy Director of Agriculture
S.D.Dharwar.

~~155~~ 155 Reconstruction Deptt

The endt at page 2 ante having issu
these papers may now be submitted to
HM (Agre) for information.

[illegible]
[illegible]-46

d.c.
21/6

JAS

[illegible]
24/6/46 HM (Agre)

[illegible]

From

D.N. Mahta, Esq., O.B.E., B.A. (Oxon),
SECRETARY, INDIAN CENTRAL COTTON COMMITTEE,
BOMBAY.

To

THE Director of Agriculture,

Bombay Province,

Poona.

Dated Bombay, the 5 AUG 1946.

~~Subject~~—

Sir,

I have the honour to say that the Progress Report on the scheme for the improvement of Dharwar-American cotton for the year 1945-46 and the programme of work for 1946-47, received with your letter No.S-36-G/18383, dated the 11th June, 1946, were considered by my Agricultural Research Sub-Committee at its meeting held on the 29th and 31st July, 1946. I am now to forward for information and necessary action the following recommendations and observations of the Sub-Committee which were endorsed by the Indian Central Cotton Committee at its meeting held on the 3rd August, 1946:-

> "The Sub-Committee noted that, after four years of work, a strain, 9-3, had been evolved which is better in yield, ginning and staple than Gadag No.1, but felt that it should not be released for general cultivation, unless it is proved, after ascertaining its spinning qualities, that it is more profitable to the grower than the latter.
>
> Subject to these remarks, the report was recommended for approval".

I have the honour to be,
Sir,
Your most obedient servant,

Sd. D.N. Mahta,

Secretary,
Indian Central Cotton Committee.

P.T.O.

No. 6894 Bombay, 9 AUG 1946

Copy forwarded to the Secretary to the Government of Bombay, Reconstruction Department, Bombay, for favour of information, with reference to his endorsement No.5920/39/18407-C, dated the 20th June, 1946.

RECEIVED 13 AUG 1946 File No. 5920/39 Serial No. C 21948

(D.N. Mahta),
Secretary,
Indian Central Cotton Committee.

G.

R.C.D

Submitted for information with ref. W.G.E. No 5920/39-18407-C, dated 20-6-46 at p. 2 ante.

15/8/46

D.C. 15/8 J.A.S.

16/8/46

17/8

No. S-36-P-15 of 1947.

College of Agriculture,
Poona, July 10, 1947.

To

Indian Central Cotton Committee,
Bombay.

Sir,

I have the honour to forward herewith the Progress Report for 1946-47 of the Dharwar-American Cotton Improvement Scheme for consideration at the next meeting of the Indian Central Cotton Committee.

Your obedient servant,

Director of Agriculture
(Research & Education),
Bombay Province.

Through

The Secretary to Government,
Agriculture & Rural Development Department,
Secretariat, Bombay, (with a spare copy for the use of Government).

VMB/9

AGRICULTURE & RURAL DEVELOPMENT DEPARTMENT
Diary No. 5920/39
Date 16 JUL 1947
Serial No. 20766

No.5920/39/20766-B.
Agriculture and Rural
Development Department.
Bombay Castle, 25th July 194

Forwarded to the Secretary, Indian Central Cotton Committee, Bombay.

By order of the Governor of Bombay,

24-7-47.

Assistant Secretary to the Government of Bombay,
Agriculture and Rural Development Department.

ISSUED

24/7/47.

Issue file

a23/7

Fifth Progress Report. (1946-47)

Preliminary date :-

(a) Date of sanction of the Scheme. ... 8.4.1942

(b) Date of commencement of the scheme ... 4.4.1942

(c) Period for which the Scheme is sanctioned . 5 years.

(d) Cotton acreage to which the results of the Scheme would be applicable. ... 2,75,000 acres.

(e) Amounts sanctioned for each year of the Scheme by the Indian Central Cotton Committee, Bombay :-

1942-43;	1943-44;	1944-45;	1945-46;	1946-47;	Total
Rs.3480/-	Rs.2814/-	Rs.2923/-	Rs.3032/-	Rs.3141/-	Rs.15390/-

Deduct for receipts at Rs.300/- per annum .. Rs.1500/-
Rs.13890/-

By the Bombay Government.:-

1942-43;	1943-44;	1944-45;	1945-46;	1946-47;	Total
Rs.350/-	Rs.230/-	Rs.230/-	Rs.230/-	Rs.230/-	Rs.1250/-

(f) Actual expenditure from the grants of the Indian Central Cotton Committee, Bombay.:-

1942-43;	1943-44;	1944-45;	1945-46;	1946-47;
Rs.3204-14-11	3184-5-0	3598-7-0	4089-6-0	Rs.4719-12-0

From 1st April 1947 to 3rd April 1947
Rs.356-2-6.

From the grants of the Bombay Government:-

1942-43;	1943-44 ;	1944-45;	1945-46;	1946-47;	1.4.47 to 3-4-47
Rs.415/-	Rs.490/-	Rs.490/-	Rs.390/-	Rs.390/-	Rs. 0 -- 0 -- 0

Total.Rs.					
3619-14-11	3674-5-0	4088-7-0	4479-6-0	5109-12-0	356-2-0

(g) Date of termination of the Scheme:- ... 3.4.1947.

(h) Receipts credited to the Indian Central Cotton Committee, Bombay..

1942-43;	1943-44;	1944-45;	1945-46;	1946-47;	1st to 3rd April 47.
Rs.Nil.	532-8-3	832-0-3	629-6-3	295-5-9	Rs. Nil.

B. Approved Programme of work for 1946-47:-

(1) Comparison of three synthetic strains, 9-3. 9-10 and 9766 from (Gadag-1 x Co2) with Gadag-1 as control.

(2) Comparison of sub-selections from 9766 and 4411.

(3) Comparison and selection from the inter-specific material from Surat.

(4) Study of crosses, back-crosses and complex crosses.

(5) Effect of different doses of manures on the expression of -- red-leaf-blight.

C. Object of the Scheme:- Evolution of a strain, through

suitable synthesis, superior to Gadag-1 in yield, ginning outturn, staple length, spinning performance and resistance to red-leaf-blight.

D. Brief resume of work done during the period under report:-

At present, a previously obtained, improved type, Gadag-1, is available. It is better than the local variety in various respects. To bring about further betterment, Gadag-1 was crossed with Co2, an American Cotton. Variety from Madras. Sub-cultures from the promising families isolated from this cross are being tested intensively. Strain 9-3- has consistantly given superior performance in every respect, as compared to that of Gadag-1. Additional synthetic material, created through selective hybridization, is also being exploited to the fullest extent. Exploratory work to minimise affectation from red-leaf-blight has been started.

E. Report of the work done during 1946-47:-

(i) This is the fifth year of the Scheme. The season, under report, was very abnormal, and characterised by continuous heavy rains. Showers received in September facilitated timely sowing and excellent germination. Constant, heavy showers, in October, retarded the growth of the cotton crop, which became sickly. Heavy rains in November, when the crop had entered the re-productive phase, affected the cotton crop adversely, which ran to leaf. Showers in January, when the crop was in full flower, induced sqares buds and young bolls to drop. In short, contineous heavy rains, absence of cold accompanied by the easterly winds induced the cotton crop to mature very late. Opening of bolls was also defective. Although, there was very little incidence of red-leaf-blight, the crop suffered to some extent from "Black-arm". On the whole the season was rather abnormal, favouring the late varieties but unfavourable to the early ones.

(ii) In the large scale replicated yield trial, the new synthetic strains 9-3 and 9-10 were included for the first time; strain 4411 which was found to be erratic in yield and not up to the standard in other requisite character was discontinued. Thus, during 1946-47 three synthetic strains, 9-3, 9-10, and 9766 derived from the cross (Gadag-1 x Co2) were compared for yield with Gadag-1 as control.

The results are summarised below :-

Strain.	9-3	9766	9-10	Gadag-1	F obs.	F Theo.
Kapas yield per acre, in lbs.	588 ...	554 ..	546 ...	542	1.16	3.24
Lint yield per acre in lbs.	217 ...	208 ..	208 ...	184		
Ginning %	36.9 ..	37.6 ..	38.1 ...	33.9		
Staple length in m.m.	23.7 ..	23.2 ..	22.9 ...	21,6		
Earliness %	75.0 ..	73.3 ..	74.0 ...	70.0		

Although, the experiment lacks significance, it may be observed that strain 9-3 has given the highest kapas and lint yields per acre. Inspite of the inclement season, strain 9-3 has kept up its superiority in earliness, ginning outturn and staple-length. Results of spinning tests of 1946 season's produce, received from the Technological Laboratory, Matunga, are tabulated below :-

Particulars.	9-3	9-10	Gadag-1
Staple length in inches.	27/32"	13/16"	25/32"
Mean fibre weight per inches.	0.115	0.142	0.141
Suitable to spin H.S.W.Cs.	40s	30s	30s
Mean strength in lbs.	69.5	65.8	59.7
Neppiness	Slightly neppy	...	free of neps.

It is clear from the above data that strain 9-3 is distinctly superior to Gadag-1 in most of the commercial characters. Efforts ar being made through selection, to minimise the percentage of immature fibres in 9-3.

(iii) Of the ten families from (Gadag-1 x Co2), two cultures viz., 9-3 and 9-10, which had consistently given superior performance during the past four years, were compared to Gadag-1, 4411 and 9766 in replicated randomised, progeny rows. Results are tabulated below :-

Cultures.	9-3-2	9-3-1	9-3-3	4411	9-10-15	9-10-17	9766	Gadag-1
Kapas yield per plot.	147.6	137.8	125.3	112.7	97.5	92.6	91.7	63.5
Ginning %	36.9	36.9	36.8	35.5	37.4	38.4	37.6	33.9
Staple length in m.m.	23.4	23.9	23.2	22.7	22.4	22.1	23.2	21.6
Earliness %	86.9	87.7	84.5	82.0	79.0	67.9	81.5	78.2

F observed= 12.8 Theoritical F= 2.11 at 5% and 2.89 at 1%

Critical difference = 63.2

It is clear from the above data that all the sub-cultures from 9-3 have given the highest yield. They also give the best all-round combination of characters. The results are in full accord with those of the past four years.

A small scale bulk trial of the same families, taken in six - replications, portray exactly the above position. Both these trials will be continued.

(iv) Village trials of 9-3, 9-10 with Gadag-1 as control:-

Strains 9-3, 9-10 were compared with Gadag-1, at three places in the tract, in cultivators' fields, for the first time, in randomised blocks with six replications. Each sub-plot measured two gunthas net. The experiment at Ron has failed due to recept of six inches rain within one day. At Gadag the yields of 9-3 and Gadag-1 did not differ statistically, while at Hossahalli 9-3 gave significantly superior yield over that of Gadag-1. Strain 9-10 was found to be very late at both the places. Average data obtained of both these village trials is tabulated below :-

Strains	Kapas yield per acre in lbs.	Ginning%	Staple length mm	Earliness.
9-3 ...	451	36.6	23.2	80.0
Gadag-1	419	33.6	21.7	77.2
9-10	273	36.0	22.6	59.0

It is clear from the above statement that strain 9-3 showed its superiority over Gadag-1 in the cultivators' fields also.

(v) Mill tests :- Actual mill test with strain 9-3 will be taken during this season.

(vi) Interspecific material :- In addition to the three promising cultures on hand, four new cultures were received from Surat. These seven interspecific cultures were tested for yield and other --- characters, in replicated progeny rows, with Gadag-1, 4411, 9766, 9-3 and 9-10 as controls. Except one from the old and one from the new lot all are significantly inferior in germination percentage. -. Except BC, 68-5-4-1-1-1-9 none really equals Gadag-1 in earliness, though the differences are not significant. Although significant differences do not exist in crude as well as the adjusted kapas yields, in both of them home-bred strains top the list. With all that three of the seven cultures show a good combination of - characters. These will be tested on a larger scale next year.

(Vii) Study of F3s. F4s.B2s.B3s and C2s.:-

1) 68 F3 individuals selected from the F2s of the best 5 crosses, involving Gadag-1, 289F/K-25, perso-American, M4, Kampala and Jinja, were tested for yield and other characters in replicated plant progency rows. Of these very good combinations are available from the progenso involving, perso-Americal, M4, Kampala and Jinja. Progenies from (Gadag-1 x 289F/k-25) are very late and thus useless to this tract; Those from (Gadag-1 x Jinja) give the highest yield; those involving M4 and perso-American give the best all round combinations. Thus the best material from the four promising crosses alone would be studied further.

2) Study of B2s:- Selected material from B-1s involving Perso-American, M4,4F-98 and Gadag-1 were similarly tested in their B2s. Back Cross progenies involving M4 give the best character combination, However, selected material from all the three back crosses will be studied next year.

3) Study of C2s:- Selected material from the C1s, obtained by crossing the F1s of the crosses mentioned under (1) with 4411, was similarly studied in their C2s. Of the five C2s studied, only two viz., (Perso-Americal x Gadag-1)4411 and (M4 x Gadag-1) 4411 give the best character combination, That involving L.S.S., though early, gives low ginning outturn, It is of interest to note here that most of the progenies from this C 2 give staple length above one inch. Selected material from these three C2s only will be carried further.

(4) Study of F4s and B3s:- Selected material from seven F3s and six B2s was tested in two separate experiments in their F4s and B3s. Most of the progenies from the back-cross(9766 x Kampala)9766 have given the best all round combination of characters. In addition to this, selected material from three F4s and three B3s will be studied further. The rest will be discontinued.

(viii) To study the effect of application of Ammonium sulphate on the incidence of red-leaf-blight, nitrogen at three levels viz., 20,40 and 60 lbs N.per acre, was applied to Gadag-1, with no-manure as control. These treatments were tried in randomised blocks in six replications. This was laid out according to the instructions of Professor Dastur. Although the increase in kapas yield went hand in hand with the increase of the nitrogen level the differences were not significant. With regard to re-leaf-blight, no manure showed slightly higher incidence. However, as the crop affectation was very slight in this season, no definite trend can be indicated. The trial will be repeated.

F. Proposed programme for 1947-48:- As per approved programme for 1946-1947 with the addition of (1)manurial trial with Groundnut cake and Ammonium Sulphate on strain 9-3 and (2) Spacing trial on 9-3 and (3) Preliminary studies for evolving varieties resistant to Black-Arm.

Sd/-S.G.Kelkar,

Cotton Breeder,
S.M.C., Dharwar.

.....

HvK.UhB.

Sd/-V.C.Pavte,
Dy.Director of Agriculture
S. D., Dharwar.

Countersigned

Sd/-

Deputy Director of Agriculture
(Crop Research), B.P., Poona 5.

.....

Form B

To accompany Progress Report on Breeding Scheme.

1

(1) Method of Layout :- Randomised Blocks with six replications
(2) Year of Trial :- 1946-47.
(3) Location in which field tests were conducted. Gadag; Dharwar District.

Kapas yield per acre

Type under test (including control)	No. of years in this test	period of picking	previous year	Last year	to date	Percentage increase over control	Statistical significance of the increase yield % test	Average Int. yield per acre
1	2	3	4	5	6	7	8	9
9-3	1st year.	15th March	-	-	588	8-4	F. Observed = 1.16	217
9-10	"	to 30th April 1947.	-	-	546	0-7	F Theo = 3.24	208
9766	"		-	-	554	2.2	C.D. 55-2 per acre.	208
Gadag-1 (control)	"		-	-	542	0.0		184

Average staple length	Average Ginning	Maximum Warp - counts if known	Average acre cost value - Kapas.	Seasonal particulars if any	Susceptibility or resistance to major tests or diseases or climatic or soil conditions	Remarks.
8	9	10	11	12	13	14
27/32	36.9	40 s	Rs 168/-	The season of 1946-47 was abnormal, characterised by heavy and untimely rains, due to wt. longer vegetative period and late maturity was obtained.	strain 9-3 carries very good resistance to red leaf-blight as compared to Gadag-1	
13/16"	38.1	30 s	not yet available			
7/8"	37.6	30 s				
15/32"	33.9	30 s	Rs 126/-			

Dy. Director of Agriculture,
S. D., Dharwar.

S. E. Kelkar
Cotton Breeder
Smc. Dha

Telegrams:—GOSSYPIUM.
Telephone No. 20964.
Letters:—Indian Mercantile Chambers,
14, Nicol Road, Ballard Estate,
P. B. No. 1002, Bombay No. 1.

No. 2125 of 1947. 149

From

C.J. Bocarro, Esq., M.B.E., M.A.,
OFFG. SECRETARY, INDIAN CENTRAL COTTON COMMITTEE,
BOMBAY.

To

The Secretary to the Government of Bombay,
Agriculture and Rural Development Department,
Bombay Castle, Bombay.

AGRICULTURE & RURAL DEVELOPMENT DEPARTMENT
File 5920/39
Date 29 Dec 1947
B 37358

Dated Bombay, the 27 DEC 1947

Subject:— Scheme for improvement of Dharwar-American cotton.

Sir,

I have the honour to say that the Progress Report for 1946-47 and the programme of work for 1947-48 of the above scheme, received with your endorsement No.5920/39/20766-B, dated the 25th July, 1947, were considered by my Agricultural Research Sub-Committee at its meetings held on the 18th and 20th November, 1947. The observations and recommendations of the Sub-Committee which were endorsed by the full Committee at its meeting held on the 22nd November, 1947, are given below for information and necessary action:-

> "The Sub-Committee considered that the progress report was satisfactory and felt that the stage had now been reached when a seed distribution scheme for the strain 9-3 should be submitted to the Committee.
>
> The Sub-Committee would like to recommend

that supplies of the new strain should be sent to adjacent provinces and States for trial and multiplication, if found suitable".

I have the honour to be,
Sir,
Your most obedient servant,

C J Bocarro
Secretary,
Indian Central Cotton Committee.

Addd

Submitted for information.
A copy of the Committee's letter may be forwarded to the Dir of Agr for information & necessary action

7.1.47

7.1.48

Secy

7/1

(Below copy of letter No. 2125, dated the 27th December, 1947, from the Secretary, Indian Central Cotton Committee.)

.....

No.5920/39/37358-B.
Agriculture and Rural
Development Department.
Bombay Castle, 16 January 1948.

Forwarded to the Director of Agriculture for information and necessary action with reference to his letter No. S-36-P-15, dated the 10th July, 1947.

By order of the Governor of Bombay,

O.C. with E.C

Assistant Secretary to the Government of Bombay,
Agriculture and Rural Development Department.

ISSUED

12-1-48

ND/12.1.

Reconstruction Department,
BOMBAY.

No. 5920/39
27 DEC 1946
C 35182

Subject:- Scheme for the improvement of Dharwar-American Cotton of the Bombay Karnatak at Gadag -- Proposals for extension of.

No. S-36-K-15/41128 of 1946. Poona, 23 December, 1946.

Reference Government Resolution, Revenue Department, No.5920-39 dated 8th April, 1942 under which Government has approved the scheme for the Improvement of Dharwar-American Cotton of the Bombay Karnatak at Gadag for a period of 5 years from 4th April, 1942 and has accepted a subsidy of Rs.13,890 offered by the Indian Central Cotton Committee. This scheme will due to terminate on 3rd April, 1947 and I submit herewith the proposals for the continuance of the scheme for a further period of 5 years i.e. from 4th April, 1947 to 3rd April, 1952 for the approval of Government and if approved for forwarding the same to the Indian Central Cotton Committee, Bombay for financial assistance.

The accompanying note prepared by the Cotton Breeder, S.M.C., Dharwar gives a brief summary of the work done during the first 4 years of the existing scheme together with the detailed programme for further work during the extension period now applied for. During the period of the scheme large scale trials of the two promising synthetic strains 9766 and 4411 derived from the cross of Gadag 1 with Co.2 have not shown any distinct superiority of these strains over Gadag No.1. Strain 9766 in spite of its high ginning outturn is considered unsuitable to replace Gadag 1 because of its low spinning value. As a result of further breeding work 36 sub-selections derived the strains 9766 and 4411 were obtained out of which strain 9-3 has given significantly higher yield than Gadag 1. In the rest of the requisite characters also this strain is found to be distinctly superior to Gadag 1 and accordingly is now under exhaustive yield test in the cultivators' fields in the district A large amount of promising material is also available as a result of either back crosses or complex crosses which would require further selection in order to find out suitable strains superior to the existing ones.

Trials of the interspecific material built up at Surat so far have not been successful in this tract. It is therefore considered worth-while to investigate whether the interspecific crosses and back crosses between the best varieties belonging to the Hirsutum and Herbaceum specis physiologically suited to the Dharwar-American cotton tract are likely to yield valuable material. This is considered to be a promising line for obtaini staple length above one inch which is not found to be possible with the method of intraspecific hybridization. It is also proposed to investigate whether hybrid-vigour can be economicall harnessed in large scale production in order to secure high yield and superior quality in Dharwar-American cotton.

It would thus be seen that there is sufficient justificatio for the continuance of the scheme and accordingly I propose that the scheme should be continued for a period of 5 years from the date of the termination of the present period of the scheme.

The detailed budget proposals are attached herewith. As th work has reached the stage where highly experienced technical ma is required to be in charge of these investigations it is propos to have one senior Agricultural Officer for botanical work and farm management in the first grade of Rs.180-10-270. The post of the counter has been converted into that of kamgar as during present times it is found extremely difficult to get a suitable man for the post of the counter who would stick to the job. A provision is also made for an additional area of 8 acres in ord to accommodate all the lines of work proposed in the programme during the extension period.

The estimated cost of the scheme during the extension period of 5 years now applied for is Rs.67,403. In accordance with the policy of the Cotton Committee regarding financial assistance to research schemes (condition No.30 of the general conditions applicable to the grants by the Indian Central Cotton Committee) the full cost of the scheme will have to be borne by the Committee, the Government bearing as usual the non-recurring expenditure (shed for bullocks and buildings for bullock-men etc.) and recurring expenditure such as office, land rent etc. as shown in appendix D. The share of the Bombay Government will be thus Rs.10,350 during the 5 years period. I would now request you to move Government to approve of the proposals for the extension of the scheme for the improvement of Dharwar-American Cotton at Gadag for a period of 5 years at the total cost of Rs.67,403 and to forward these proposals to the Indian Central Cotton Committee for consideration at the next meeting of that body to be held in January, 1947. The Committee may be requested to pay Rs.57,053 as the cost of the scheme for the extension period.

for Director of Agriculture.

of the Bombay-Karnatak at Gadag.

(Extension and expansion proposals for a period of five years from 4th April 1947 to 3rd April 1952.)

-- * --

I. Introduction:-

Karnatak is the only tract, in the Bombay Province, -- wherein American cotton crop continues to be cropped on a -- commercial scale. It was introduced by the East India Company, in the first half of the previous century. The average, annual, cotton acreage of the Dharwar-American cotton zone, amounts to 2½ lakhs acres. Most of it is concentrated in Gadag and Ron -- talukas, in the Dharwar district. By applying selection to the acclimitised, Dharwar-American cotton material, a type, superior to it in every respect, was isolated in 1914. At present, this type, now well known as Gadag-1, practically covers the whole of the area of the Dharwar-American cotton tract. Further -- botanical improvement of the Gadag-1, was overdue, but was held up due to several reasons, the most pronounced one being the -- absence of the full-fledged breeding station, devoted to this work, in the heart of the Dharwar-American cotton tract. The -- inception of the " Scheme for the Improvement of the Dharwar--American Cotton of the Bombay-Karnatak at Gadag," as sanctioned by the Government of Bomaby, in their G.R.R.D.No.5920/39 dated 8th April 1942, and financed by the Indian Central Cotton -- Committee, Bombay, alleyed this long felt want. The monetary side of the present scheme is portrayed in the table below:-

Table No.1

Particulars.	1942-43 to 1945-46 4 years.	Proposed for 1946-47.	Total
1. Sanctioned grants by the I.C.C.C., Bombay.	14,427	3,812	18,239
2. Sanctioned by the Govt. of Bombay.	1,785	390	2,175
Total	16,212	4,202	20,414
3. Actual expenditure -- incurred (rounded to the nearest rupee.)	14,078	3,812 (Estimated)	17,819
4. Deduct receipts creditted to the I.C.C.C., Bombay	1,996	500	2,496
Total	12,082	3,312	15,323

This scheme, which was statred with the object of " -- 'evolving a strain, for the Dharwar American cotton tract of the Bombay-Karnatak, by suitable synthesis, superior to Gadag-1, in yield, ginning out-turn, staple length, spinning performance, earliness and resistante to red-leaf-blight," will complete its first period of five years on 4th April 1947. Proposals for its extension, with additional facilities demanded by its natural and organic expansion, are submitted herein, for an other -- period of five years i.e., from 4th April 1947 to 3rd April -- 1952.

II. Approved programme of work of the present scheme :

(1) Comparison of the two synthetic strains 9766 and 4411, - derived from the cross (Gadag-1 X Co2) with the standard, -- improved variety of the tract viz., Gadag-1 as check.

(2) Comparison of the sub-selections from 9766 and 4411.

(3) Collection of the available, improved, American cotton -- varieties from other Indian Provinces and States, and comparison of the same with Gadag-1.

(4) Creation and exploitation of fresh hybrid material.

(5) Testing of "inter-specific" material from Surat, to select suitable strains fro the tract.

III. Review of the work done in the first four years of the Scheme.

(1) Plant material in 1942 :- In addition to Gadag-1, strains 9766, 4411 and 36 cultures derived from the cross (Gadag-1 X - Co2), selected progenies and bulks from the inter-specific - and back-cross material received from Surat, together with a small collection of exotic varieties formed the immediately - available basis for the working of the Scheme, at its inception.

(2) Large scale yield trial :- To determine the comparative germ-plasm value of strains 9766 and 4411, derived from the cross (Gadag-1 X Co2), they were compared for yield and other requisite characters, along with Gadag-1 as control, in -- replicated, randomised blocks, during the previous four -- seasons (1942-43 to 1945-46). Average behaviour of these -- varieties is tabulated below :-

Comparative, average performance of strains 9766,4411 and Gadag-1.

Particulars	Strains. 9766	Gadag-1	4411
1. Kapas yield per acre in lbs.	467	449	419
2. Ginning percentage.	36.6	32.7	34.1
3. Staple length in m.m.	22.9	20.65	21.5
4. Earliness as denoted by the percentage of yield picked in the first two pickings.	71.8	73.3	76.4
Technological results.			
(Average of three years -- 1942-43 to 1944-45.)			
1. Staple length in inches	13/16	13/16	14/16
2. Fibre weight per inch.	0.152	0.152	0.132
3. H.S.W. Counts.	31.7	34.6	31.3
4. Neppiness.	Little - neppy.	Almost free to little - neppy.	Little - neppy to neppy.

Combined analysis of variance of the four year's data fails to indicate significant differences in the yields of the three varieties. Strain 9766, inspite of its high ginning outturn, is unsuitable to replace Gadag-1, because of its low spinning value.

(3) Comparison of 36 sub-selections :- During the past four seasons, selected material from the 36 sub-selections, derived from the strains 9766 and 4411, has been tested, in two separate experiments Viz., (i) replicated randomised progeny rows and - (ii) bulk trial. In both these trials Gadag-1 and 9766 served as controls. Strain 9-3 derivative has given consistantly the best performance. Average results of these trials (eight in - all) are tabulated below:-

Table No.3

Variety	Kapas yield per acre in lbs	Lint yield per acre in lbs	Ginning percentage.	Staple length in inches	Fibre weight	Earliness %	Red-leaf-blight.
9-3	541	196	36.4	0.99	0.119	77.1	1.48
9766	453	165	36.8	0.92	0.152	69.7	1.43
Gadag-1	453	148	32.6	0.84	0.151	78.1	2.02

Excepting 1943-44, strain 9-3 has given significantly -

superior yield. On an average the increase comes to 19.5 % in the case of kapas and 33.0 % on the basis of lint yield, over those obtained from Gadag-1. In the rest of the requisite -- characters also strain 9-3 is distinctly superior to Gadag-1. Lint of 9-3 has been sent for spinning test, the results of -- which will decide the status of this strain. In the mean while, it is undergoing exhaustive yield tests in the cultivators' -- fields, in the districts.

(4) Collection and comparison of Inter-Provincial material:-

Of the different, improved, American cotton strains, -- obtained from the Indian Provinces and States, the best nine were tested for yield and other characters, in replicated, -- rabdomised blocks, with Gadag-1, 9766 and 4411 as controls, -- during the last three seasons (1943-44 to 1945-46). None of them equalled Gadag-1 in yield, although some of them are superior to it in one or two characters. The best of these -- have been used as parents in crosses.

(5) Creation of new synthetic material :- Several crosses, back-crosses, complex crosses involving Gadag-1, 9766, 4411 and strains from other Provinces and also from out-side India have been made. The present position with regard to the work is that (i) out of 28 straight crosses, 18 back-crosses and ten complex crosses, crosses and back-crosses involving Gadag-1, 9766, 4411 289F/K 25, Perso American, M-4, Kampala, Jinjiya, Co2 and Co4 only have shown F2 mean values for most of the requisite -- characters above the selection level, (ii) in complex crosses also, 186F, 289F/K-25, M-4, Perso American and L.S.S. go well with the home bred strains but not with Co varieties. The -- locally obtained synthetic strain 4411-3, though not in itself good, proves to be a very good parent to infuse earliness -- without lowering values for yield and other characters. Most of this material ranges from F3 to F4, B2 to B3, and C2 to C3.

With regard to "Choice of Parents" in intra-specific -- crosses, it is interesting to note that the data obtained indicate that (i) the acclimatised, geographically separated material such as Perso American, Co4, Co2 etc., blends well

the Dharwar-American cotton.

(6) Testing of inter-specific material from Surat :- During the last four years, of the 277 selections and bulks tested, only two Viz., (i) B.C.68-5-4-1-1-1-9 and (ii) B.C 68-5-1-3-3-8 -- approach Gadag-1 in yield. The performance of both these strains, along with that of Gadag-1 is tabulated below :-

Table No.4

Strain	Crude yield of kapas in gms.	Adjusted yield of kapas in gms.	Ginning %	Staple length in m.m	Earliness.
BC.68 etc.,9	124.3	119.6	36.8	24.7	58.8
BC.68 etc.,8	123.7	133.0	35.1	23.3	68.7
Gadag-1	153.7	145.8	33.6	20.0	71.8

It is clear from the above data that (i) though both the inter--specific back-crpss derivatives are statistically equal to -- Gadag-1, the latter records the highest yield; (ii) though both the derivatives are superior to Gadag-1 in ginning percentage and staple length, only BC-68 etc.,9 equals the new strain 9-3 in -- those characters; but on the other hand it is very late and thus unsuitable to replace either Gadag-1 or 9-3.

It is but meet to submit here, that out of the varied, inter--specific material created at Surat and tested at Gadag, only - BC-68, involving D.A 2-6-8 and Gourani-6 has approached Gadag-1, in its suitability to this tract. Of the parental varieties of this back-cross, one is a selection from the local Dharwar-American variety and the other is a G.arboreum variety grown in the -- Hyderabad State, which adjoins the Dharwar-Ameriacn cotton zone. This suggest that (i) in contradiction with the indications -- obtained from the intra-specific crosses with regard to " Choice of Parents", inter-specific crosses or back-crosses effected - between varieties chosen from geographically separated parts do not yield balanced material of economic value, (ii) thus, the success of such inter-specific crosses would mainly depend upon the physiological adaptability of the (a) parental species and (b) the varieties chosen from those species as parents, to the environmental complex of the tract, in which it is meant -- ultimately to thrive. As the Dharwar-American cotton tract of

the Bombay-Karntak is closely interwoven with the Kumpta cotton tract, one can reasonably feel that the interspecific crosses and back-crosses, made between varieties belonging to G.hirsutum and G.herbaceum species, which thrive well at Gadag, offer a greater chance of yielding valuable segregates, physiologically suitable to this tract. It is essential, therefore, to build up such material.

IV. Assessment of the present position and the avenues ahead for further progress. The present position of the work of the botanical improvement, with regard to the Dharwar-American cotton of the Bombay-Karnatak, done during the first four years of the Scheme, can be assessed as below:-

(1) Neither the strain 9766 nor 4411 is fit to replace Gadag-1.

(2) Experimental results obtained on the breeding plots at Gadag definitely indicates the superior germplasm value of the sub-selection 9-3, in yield, ginning putturn, staple length, fibre weight and resistance to red-leaf-blight as compared to that of Gadag-1. An additional period of two to three years, is necessary to study its behaviour in the cultivators' fields; in the Technological Laboratory and Mill tests and to allocate its final status.

(3) Isolation of promising strains from the new synthetic material and their comparative study, will require an additional period of five to six years. Considering the soil and climatic complex of the tract, it is doubtful whether the intra-specific hybridization is likely to yield a strain having more than one inch staple length, in combination with the rest of the characters of strain 9-3.

(4) Interspecific material built up at Surat, Surat does not seem to be useful for this tract. It is worth investigating whether the interspecific crosses and back-crosses made between the best varieties belonging to the hirsutum and herbaceum species, physiologically suited to the Dharwar-American cotton tract, are likely to yield valuable material. Such crosses will have to be affected at Gadag. This seems to be a promising avenue to obtain staple length above one inch, in combination with the

important competitor of the smaller Dharwar American one. If the cultivation of American cotton in Karnatak, for which -- there is an increasing demand, is to flourish, high lint yield and superior quality must go hand in hand. There is a -- possibility of attaining this, through economic harnessing of hybrid-vigour to large scale production. Thus exploration of this avenue is but a natural out-come of the organic growth of this scheme.

V. Programme of work for the extension period.

(1) To investigate the possibility of replacing Gadag-1 with strain 9-3 for bringing additional money to the cultivators' pockets, by conducting exhaustive village trials in the tract, spinning tests in the Technological Laboratory, Matunga and -- actual Mill tests.

(2) Isolation of promising strains, superior to Gadag-1 and 9-3 in all the requisite agricultural and trade characters, -- from the new synthetic material on hand, and study of their -- behaviour in the tract.

(3) Study of the inter-specific-back-cross material being -- received from Surat year after year.

(4) Creation of inter-specific and back-cross material -- involving locally improved herbaceum and hirsutum varieties and comparison of the same with the best strains on hand. Suitable material will be sent to Surat for cytological study.

(5) Study of hybrid vigour in American cottons and finding out ways and means to utilise the same for securing cheap and enhanced per acre production of lint of superior quality.

(6) Assessment of the response given by the improved strains on hand to manurial, cultural and other agronomic variants, -- under local conditions.

It is apparent from the programme that the first three - items are but the continuation of the work on hand; and the latter three are the new items, not super-imposed but forming the natural, organic growth of the scheme.

The natural expansion of the scope of work programme to be executed satisfactorily, entails adequate increase in staff, furniture, land, livestock and other equipment and appliances. These are dealt with briefly below:

(1) Staff.

Staff at present.	Required staff during the extension period.
(i) One Agricultural Officer for botanical work. (Grade Rs.110-8--150).	(i) One Senior Agricultural Officer for botanical work and Farm management (Grade Rs.180-10-270).
(ii) One Counter. (Grade Rs.20-1-30).	(ii) One Agricultural Officer to help the Senior Officer in his botanical and agronomic experimental work. (Grade Rs.95-5-120-E.B.-130-8-170).
(iii) One peon. (Grade Rs.15 p.m.).	(iii) One Kamgar to take down observations detailed by the Agricultural Officer counting measurements etc., etc. (Grade Rs.30-35-5/2-60).
	(iv) One peon (Grade Rs.15-1-20).

The necessity of having and the duties of the staff listed above is self evident. A Watchman and an additional Bullockman have been requisitioned under "Contingencies". The Watchman is meant for guarding valuable plant material during the off season and the property of the Farm all the year round; the Bullockman is necessary to tend the additional pair of bullocks.

(2) Additional equipment.

(i) Increase in farm area:- At present, an area of eight acres, at an annual rent of Rs.20/- per acre is available. Of these only four acres can be utilised for the experiments on cotton; the remaining four acres go under rotational crops. With the expanded scope of work, plant material, number of experiments etc., will increase. Thus the present area will have to be doubled (16 acres). Due to the present abnormal situation land at Gadag is not available below an annual rental rate of Rs.40/- per acre. Additional expenditure will have to be incurred for fencing the increased area for erecting huts for the Bullockman and the Watchman; the present bullock shed will have to be extended. Provision for these items have been made under J-Grants-in-aid.

(ii) Additions to furniture and field and laboratory equipments:-- With the increase in staff, work and land, addition to furniture, implements, livestock and field and laboratory appliances will be essential as detailed in Appendix C.

VII. Budget Estimates for the Extension Period of five y

The details of expenditure and receipts estimates are given in Appendices A, B, C, D and the final abstract in Appendix E.

Total cost of the Scheme, including the cost to be borne by the Bombay Government, during the extension period of five years.			67,403
Expenditure to be borne by the Indian Central Cotton Committee, Bombay:-			
Recurring. -			
	Rs.		Rs.
i) Establishment ..	32,858		
ii) Contingencies ..	25,695		
Total..	58,553	...	58,553
Non-recurring.			
i) Details in Appendix C		...	2,500
		Total.	61,053
Deduct sale proceeds for five years from 16 acres at Rs.50/- per acre per year		...	4,000
Net expenditure to be borne by the I.C.C.C., Bombay.			57,053
Expenditure to be borne by the Bombay Government:			
*Recurring ..	Rs.5,350		
*Non-recurring ..	Rs.5,000		
	Rs.10,350		
*As detailed in Appendix D.			
Total expenditure to be borne by the Bombay Government.		...	10,350

Thus the total cost of the scheme Rs. ~~10,350/-~~ 67403

Relevent details of estimated expenditure, to be incurred under different sub-heads are given in the body of the relevent Appendice.

Sd/- S.G.Kelkar,
Cotton Breeder, S.M.C., Dharwar.

Sd/- V.C.Pavate,
Dy. Director of Agriculture,
S.D., Dharwar.

Submitted with reference to G.R.R.D.No. 5920/39, dated 8th April 1942 sanctioning the scheme for the improvement of Dharwar - American Cotton of the Bombay-Karnatak at Gadag for a period of five years from 4rh April 1942 at a total cost of Rs.16,640/- less estimated receipt Rs. 1500/- and accepting a subsidy of Rs. 13,890 from the Indian Central Cotton Committee for expenditure on the work of the scheme. The scheme will terminate on 3rd April 1947. The Director of Agriculture has now submitted proposals for continuance of the scheme for a further period of five years from 4th April 1947 to 3rd April 1952 ~~xxdxthexIndxxx~~ for the approval of Govt. and the Indian Central Cotton Committee and for the necessary financial assistance.

@ p.63-18 ante

2. The note accompanying the Director's present letter gives a brief summary of the work done during the first 4 years of the existing scheme and the detailed programme for further work during ~~on~~ the extensive period, now ~~approved~~ applied for. The reasons and necessity for the extension of the scheme are explained in paragraphs 2 and 3 of the Director's present letter.

3. The total estimated cost of the scheme during the proposed extension period of 5 years is Rs. 67,403/- In accordance with condition No. 30 of the General Conditions applicable to grants by the Indian Central Cotton Committee, full cost of the scheme ~~xxxx~~ will have to be borne by the Committee, Govt. bearing as usual the non-recurring expenditure (shed for bullocks and buildings for bullock men etc.) and recurring expenditure such as office, land rent etc. as shown in appendix D. In the circumstances, the Director's proposal may be approved and the scheme may be forwarded to the Indian Central

7 p.25 ante

Cotton Committee for consideration at its meeting to be held in January 1947. The Committee may be asked, as proposed by the Director, to bear full cost of Rs. 57,053 on account of the proposed extension of the scheme, the remaining cost of Rs. 10,350/- (vide Appendix 'D') being borne by Govt. The question of providing funds for this scheme will be considered on receipt of the sanction of the Indian Central Cotton Committee to the proposed extension. Subject to approval, the accompanying letter and endt may issue after u.o.r. to the Finance Deptt.

2-1-47.

DAL
2.1.47

FINANCE DEPARTMENT
A
6/1/47

Addl. Secy.

H. M. (Agre). after u.o.r.

N.L. dated 3rd January 1947 to F.D.

Fin. Deptt. (A)

Please see the foregoing R.C.D. note of 2-1-47. F.D. may agree to the proposed letter to the I.C.C.C. being issued.

MLA. 2.1.47;

6.1.47

6/1

6/1/47

RECONSTRUCTION DEPT.
File No. 5920/39
11 JAN 1947
Serial No. C

No. 173 Reconstruction Dept.

Submitted with reference to the office note dated 2nd January 1947.

2. The Finance Department having agreed to the Director's proposals for the continuance of the scheme for the improvement of Dharwar-American Cotton of the Bombay Karnatak at Gadag for a further period of five years from 4th April 1947 to 3rd April 1952, the letter and endt on page 61 ante may now issue.

14-1-47

A.S.

J.C. 14/1/47

H-M (Agri.)

Anip.P. 21-1-47

Issued 23/1

Recon. Deptt

Submitted with reference to G.L. No 5920/39-C, dated 24th January 1947 on page 61 ante.

Since there are some modifications suggested by the I.C.C.C. in the original proposals from the D of A which was forwarded to the Committee for its consideration it is necessary to have remarks from the D of A. He may therefore be asked to favour Govt with his remarks on the Committee's present letter.

The draft letter overleaf may issue

5-3-47

B
5/3

A.S. (Mr. B.)

Urgent ~~72~~ 42 Letter

To

The D of A

No 59 20/39-5403-C Bombay 5th March 1947

Reference letter from the Secy I.C.C.C No 3729 dated 27th Feb 1947, a copy which has been forwarded to you by the Secy under his no 3730, dated 27th Feb 1947.

Please favour Govt with your remarks on the Committee's letter, as soon as possible

By order etc

B
5/3

ISSUED
Sig
6/3

Asstt Secy to Govt

5/3/47

~~123~~ 177

Letter.

No. S-36-K-15/1162 of 1947.
Poona 1, 1st March 1947.

To

The Secretary to Government,
Reconstruction Department, Bombay.

Subject:- Scheme for improvement of
Dharwar American Cotton.

Reference Government Reconstruction Department, letter No. 5920/39-5403-C of 5-3-1947. I am consulting the Deputy Director of Agriculture, S.D., Dharwar, in the matter and will send my reply to Government as soon as his reply is received

CONSTRUCTION DEPT.
File No. 5920/39
18 MAR 1947
Serial No. C 7185
16 Bmj 11/3

for Director of Agriculture.

K:15

R.C.D

A further communication from D of A may be awaited.

20-3-47

20/3/47

The Secretary to Government,
Reconstruction Department, Bombay.

Original letter as been received in D Br under No 6044/39 9145 9-4-1947

No.P-82/9879of 1947 Poona 1, 8th April 1947.

Reference Government letter, Reconstruction Department, No. 1044/39-3972-D of 27th March 1947, regarding the continuance of Taluka Demonstration Centres in Athani and Sangola talukas. The budget head tow which the expenditure is debitabl has not been mentioned therein. The Dy. Director of Agriculture, S.D., Dharwar, who is in charge of these Taluka Demonstra-tion Centres, has requested me to let him know the budget head to which expenditure on account of these Centres may be debited during the current year i.e. 1947-48. As the question of continuance of these Taluka Demonstration Centres was under consideration, no budget provision was proposed in the budget orders issued by Government in Government Letter, Reconstruction Department, No. 6044/39/3972-D of 27th March 1947, I propose that the expenditure of these Taluka Demonstration Centres may be debited to the budget heads as shown below:-

Being dealt with separately in D Branch File No 6044/39 9145

Major Head - 40 Agriculture
Minor Head - N-Post War Reconstruction & Development Programme.
Sub-Head - E-Agricultural Demonstration and Propaganda -
(10) Athani Taluka Planning.
(11) Sangola Taluka Planning.

I am, therefore, instructing the Dy. Director of Agriculture, S.D., Dharwar, in anticipation of Government sanction, to debit the expenditure to the above heads. I would, therefore, request that Government may please be moved to accord sanction to my proposal and to approve of the action taken by me in anticipation of Government sanction. I may also be allowed to include the expenditure in the revised estimates of expenditure for the year 1947-48.

Similarly, I may invite reference to my letter No.S-36-K-15/41128 of 23rd December 1946, wherein I have submitted proposals for the extension of the scheme for the improvement of Dharwar=American Cotton. The sanctioned period of this Scheme terminated on 3rd instant. Government sanction for the extension of this scheme is still awaited. In the meantime this

scheme is being continued further in anticipation of Government sanction. I am also instructing the Dy. Director of Agriculture, S.D.,Dharwar, to debit the expenditure of this scheme to the head "40-Agriculture- J- Grant-in-aid contribution, etc.". during the ~~xxxxxxxx~~current year. I would, therefore, request that Government may please be moved to accord sanction to the scheme and to approve of the action taken by me in anticipation of Government sanction. I may also be authorised to include the expenditure of this scheme under the above head in th revised estimates of expenditure for the year 1947-48.

The favour of early orders of Government in the matter is requested.

Sd/-
Director of Agriculture.

Copu (w.c.) for information to.-

The Dy. Director of Agriculture, S.D.Dharwar, in continuation of this office letter of even No. of 3rd inst. The expenditure in respect of the scheme in question should be debited to the heads shown in the above letter to Government.

the continuance of the scheme for the improvement of Dharwar- American Cotton of the Bombay Karnatak at Gadag for a further period of five years from 4th April 1947 to 3rd April 1952 was forwarded for the consideration of the Indian Central Cotton Committee with Government letter No. 5920/39-C dated 24th January 1947. The total cost of the scheme during the period of extension is estimated at Rs. 67,403/- In accordance with condition No. 30 of the general conditions applicable to grants by the I.C.C.C., full cost of the scheme is to be borne by the Committee, non-recurring expenditure (shed for bullocks and building for bullockmen, etc and recurring expenditure such as office, land rent, etc) being borne by Govt. as usual. The I.C.C.C. was requested to approve the proposed extension of the scheme and agree to bear full cost of the scheme viz, Rs. 57,053, the remaining cost of Rs. 10,350 being borne by Govt. In its letter No. 3729 dated 27th February 1947 the I.C.C.C. approved tentatively the proposed extension of the scheme at a total estimated cost of Rs. 59,563 and agreed to bear Rs. 46,713, the remaining cost of Rs. 12,850 being borne by this Govt. The I.C.C.C. further intimated that the sanction of the Central Govt. to the proposed extension has been applied for and a further communication will follow on receipt of the Central Govt's orders. The Director of Agriculture's remarks in regard to revised allocation of the cost of the scheme have been called for in Govt letter No. 5920/39/5403-C dated 5th March 1947.

2. The sanctioned period of the scheme terminated on 3rd April 1947. In para. 2 of the present letter the Director of Agriculture intimates that he has continued the scheme

cheme and approve of the action taken by him in continuing he scheme further in anticipation of Govt. sanction and uthorize him to include the expenditure in the revised estimates for the current year under '40-Agriculture-J-Grants-in-aid, Contributions etc.' The Central Govt's orders on the proposed extension of the scheme have not been received. In the meanwhile, as the Indian Central Cotton Committee has tentatively approved the proposed extension, there seems no objection to approve the Director's action in continuing the schem further in anticipation of Govt. sanction, and he may be informed accordingly. The accompanying letter and endts. may issue after u.o.r. to F.D.

16-4-47
17

19/4

Addl. Secy

FINANCE DEPARTMENT
File No. 18/4(4)
Date
Serial No. AWR

Fin. Deptt (A)

F.D. may agree to the orders proposed by the R&D at p 49 post. Final orders sanctioning the extension of the scheme will have to be issued after modifying the scheme in the light of the I.C.C.C's letter at p 35-36 ante. The R&D may be requested to indicate this in the proposed letter.

OD/16/4.

22.4.47

23/4

RECONSTRUCTION
File No. 5920/39
24 APR 1947

To R&D (23-4-47)

No. 5920/39-C. Bombay, 30 April 1947.

Reference. para. 2 of your letter No.P-82/9879 dated 18th April 1947 regarding the continuance of the scheme for the improvement of Dharwar- American Cotton for a further period of five years from 4th April 1947 to 3rd April 1952.

Govt. approves of the action taken by you in continuing the scheme further in anticipation of Govt. sanction to prevent a break in the continuity of the scheme and authorises you to include the expenditure ~~of the scheme~~ in the revised estimates for the current year under '40-Agriculture-J-Grants-in-aid, contributions, etc.' Final ~~formal~~ orders regarding the extension of the scheme will be issued as soon as the sanction of the Central Govt. to the scheme, is ~~revised~~ received.

modified in light of the suggestions made by the I.C.C.C's letter No. 3729 dated 27-2-1947, 6 85-3 Cante

By order of the Governor of Bombay,

17/4

Addl. Secy. to Govt

16-4-47

ISSUED Sup. 3/5

Copies forwarded to:-

the Accountant General (through the F.D.).,

the Finance Department,

ISSUED Sup. 3/5

Reconstruction Dept

Submitted with reference to the office note dated 17th April 1947.

x/pp 47-48 cante

2. The Finance Department having agreed, the foregoing letter and endt may now issue

OD/16/4.

25-4-47.

Addl. Secy. 25/1

H.M (Agri) 26/4

Letter

No.S-36-K-15/10450 of 1947

To

The Secretary to Government,
Reconstruction Department,
Bombay.

RECONSTRUCTION DEPT.
File No. 5920/39
17 APR 1947
Serial No. C 9990

Poona, 16 April, 1947

Subject:-Scheme for improvement of Dharwar American cotton

Reference Government Reconstruction Department, letter No.5920/39-5403-c of 5-3-1947, I have no objection to remove items 4 and 5 from the programme of work and to include the subject of pests and diseases as suggested by the Sub-Committe It may be, however, pointed out that exploratory work on pests and diseases has already been started in consultation with Dr Dastur and the Plant Pathologist to Government, B.P., Poona, has been approached for necessary help to find out remedial measures for black arm disease.

2. As regards the shares of the Indian Central Cotton Committee and Bombay Government, attention is invited to condition No.8 of the general conditions applicable to the grants made by the Indian Central Cotton Committee wherein is definitely stated that all expenditure in respect of payment of rent on land or buildings shall be borne by the Provincial Government. Accordingly expenditure as per appendix "D" only attached to my proposal is to be borne by Bombay Government. It is not understood why the items of non-recurring expenditure of Rs.2,500/- as shown in Appendi "C" which are meant for deadstock and furniture should al borne by the Bombay Government as these items do not f under condition No.8 as stated above. In the origin also the non-recurring expenditure of this nature amounti to Rs.775/- was borne by the Indian Central Cotton Commitee (Vide please Government Resolution, Revenue Department, No 5920/39 of 8-4-1942). I would, therefore, request that th committee's attention may be drawn to condition No.8 and the may be requested to bear the non-recurring expenditure amou ~~ing~~ (for dead stock and furniture) to Rs.2,500/- as shownin appendix "C" as had been done in the original scheme.

RD Raje
for Director of Agriculture

Gsa/15-8-1947

Recon. Deptt.

The main ppo bearing file No 5920/39-5403-c have been referred to the on 17/4/47. The receipt of the ppo may be awaited

18-4-47

18/4/47

Subdh

Submitted with ref. to G.L., No. 5920/39-5403 dated 5-3-47 and the proceedings underlying it.

2. In view of the facts explained by the Dir. of Agre. in his letter dated 16-4-1947, the letter overleaf to the Secy., Indian Central Cotton Committee, may issue.

9-5-47

Addl. Secy. 9/5

H.M. (Agre). 1715

20/5

No. [illegible]
~~R.C.D.~~
B.C., 21st May 1947.

To

The Secy., I.C.C.C.

Subject: Cotton
Scheme for improvement of Dharwar-American Cotton of the Bombay Karnatak at Gadag
Proposals for extension of,

Ref: Your letter, No. 3729, dated 27th ~~2-47~~ Feb., 1947.

Sir,

I am directed to say that the Govt. of Bombay has no objection to ~~remove~~ the deletion of items 4 and 5 from the programme of work of the above scheme and ~~to include~~ the inclusion of the subject of pests and diseases as suggested by ~~the~~ your Agrl.Research Sub-committee. I am, however, to point out that exploratory work on pests and disease has already been started in ~~xxxxxxxxx~~consultation with Dr. Dastur and the Plant Pathologist to Govt. has ~~and~~ been ~~approached for necessary help in to point out~~ asked to take up this work of investigation of remedial measures for the black arm disease.

2. As regards the shares of the I.C.C.C. and the Govt. of Bombay, I am to invite your attention to condition No. 8 of the general conditions applicable to the grants mde by the I.C.C.C. and to say that in accordance with this condition, all expdre. in respect of payment of rent on land or buildings ~~has to~~ is required to be borne by ~~xxxxxxxxxxx~~the Provincial Govt. It is not, therefore, clear why ~~the~~ items of non-recurring expdre. of Rs. 2500/- shown in appendix 'C' which are meant for deadstock and furniture~~xx~~ should ~~also~~ be borne by the Bombay Govt. as these items do not fall under condition No. 8. I am, therefore, to request that the I.C.C.C. ~~xx~~ may be moved to agree to bear the non-recurring expdre. amounting to Rs. 2,500/- as shown ~~xxx~~ in appendix 'C' (for dead stock and furniture) as had been done in the original scheme."

Your obedient servant,

[signature]

~~Addl.~~ Secy. to Govt.

Copy forwarded to the Dir. of Agre (Research & Edn) (with ref. to ~~his~~ Dir's letter No. S/36-15/10450, dated 16-4-47).

24/5

24/5

Telegrams:—GOSSYPIUM.
Telephone No. 20964.
Letters:—Indian Mercantile Chambers,
14, Nicol Road, Ballard Estate,
P. B. No. 1002, Bombay No. 1.

No. 2385 of 1948

From C.J. Bocarro, Esq., M.B.E., M.A.,
OFFG. SECRETARY, INDIAN CENTRAL COTTON COMMITTEE,
BOMBAY.

To The Secretary to the Government of Bombay,
Agriculture and Rural Development Department,
Bombay Castle, BOMBAY.

5920/39
9 JAN 1948
Serial No. B 1165

Dated Bombay, the 8 JAN 1948

Subject:— Scheme for improvement of Dharwar-American cotton - Extension of -.

Sir,

In continuation of this office letter No.7797, dated the 30th August, 1947, I have the honour to say that your letter No.5920/39-9990-B, dated the 21st May, 1947, on the above subject, was considered by my Agricultural Research Sub-Committee at its meetings held on the 18th and 20th November, 1947; the observations and recommendations of the Sub-Committee which were endorsed by the Indian Central Cotton Committee at its meeting held on the 22nd November, 1947, are given below for information:-

> "The Sub-Committee considered that the original demands of the Bombay Government should be accepted and that the non-recurring expenditure of Rs.2,500/-, on account of deadstock and furniture, should be borne by the Committee".

Sanction of the Central Government to an additional

grant of Rs.2,500/- is being applied for and their orders will be communicated on receipt.

I have the honour to be,
Sir,
Your most obedient servant,

C. J. Bocarro
Secretary,
Indian Central Cotton Committee.

[Below, copy of letter from the Secy. I.C.C.C. No. 2385 dated 8th Jany 1948]

No. 5920/39-B

A.C. 15th Jany 1948

copy forwarded to the Dir. of Ag. for information with reference to Govt letter No 5920/39-9990-B dated 21st May 1947

By order of the Secy.

15/1/48

Sup. 16/1 Sr. Assistant Secretary to Govt

14/1/48

To

The Secretary to Government,
Agriculture and Rural Development
Department Bombay.

AGRICULTURE & RURAL
DEVELOPMENT DEPARTMENT
File No. 5920/39
Date 27 MAR 1948
Serial No. B 11080

Subject:- Proposals for the extension of the scheme for improvement of Dharwar-American Cotton of the Bombay Karnatak at Gadag.

No.Res/S-36-K of 1948. Poona 1, 26 March, 1948.

Reference correspondence ending with Governmer endorsement, Agriculture and Rural Development - Department, No.5920/39-B, dated the 15th January, 19

The Indian Central Cotton Committee has agree to the proposal for the substitution of a senior Agricultural Officer for the existing Agricultural Officer in the junior grade and the replacement of the Counter by a Kamgar, vide Committee's letter No.3729, dated the 27th February, 1947, addressed to this office, a copy of which was endorsed to Government. Final sanction of Government to the extension of the period of the scheme for improveme of Dharwar-American Cotton for five years from the 4th April, 1947, to the 3rd April, 1952, is yet awaited. In this connection, I may state that the existing Agricultural Officer in the II grade, in charge of the scheme and the existing Counter have been actually entrusted with the duties of the Seni Agricultural Officers in the I grade, and the Kamga respectively, from the 4th April, 1947, but for wan of final Government sanction to the extension of th scheme, they have not yet been promoted to the hig grades.

In the circumstances, I am to request you t move Government to issue final orders sanctioning the extension proposals of the scheme for improve of Dharwar-American Cotton of the Bombay Karnatak at Gadag, at an early date.

Favour of early orders of Government in the matter, is requested.

Director of Agriculture.

Psk.23/3.

Asold

23/3 Please see the I.C.C.C's letters No. 3729 dated 27th Feby 194 and No. 2385 dated 8th Jany 1948

2. Perhaps a copy of the Dir of Agri's letter may be forwarded to the Secy. I.C.C.C and he may be requested to state when the sanction of the central Govt. to the extension of the scheme for the improvement of Dharwar-American Cotton of the Bbay Karnatak may be awaited

OB 8/4

[illegible]/1948

Telegrams:—GOSSYPIUM.
Telephone No. 20964.
Letters:—Indian Mercantile Chambers,
14, Nicol Road, Ballard Estate,
P. B. No. 1002, Bombay No. 1.

No. 4351 of 1948

From C.J. Bocarro, Esq., M.B.E., M.A.,
OFFG. SECRETARY, INDIAN CENTRAL COTTON COMMITTEE,
BOMBAY.

To
The Secretary to the Government of Bombay,
Agriculture and Rural Development Department,
Bombay.

Dated Bombay, the APR 8 - 1948

Subject:— Scheme for improvement of Dharwar-American cotton.

Sir,

I have the honour to invite reference to this office endorsement No.3730, dated the 27th February, 1947, and letter No.2385, dated the 8th January, 1948, and to convey the sanction of the Government of India to the extension of the above scheme at a cost to the Committee of Rs.49,213/- spread over a period of five years, with effect from the 4th April, 1947.

I have the honour to be,
Sir,
Your most obedient servant,

C.J. Bocarro
Secretary,
Indian Central Cotton Committee.

AGRICULTURE & RURAL DEVELOPMENT DEPARTMENT
No. 5920/39
9 APR 1948
B 12832

P.T.O

No. 4352. Bombay, the APR 8 - 1948

Copy forwarded to the Director of Agriculture, Bombay Province, Poona, for favour of information with reference to this office letter No.3729, dated the 27th February, 1947, and this office letter No.2385, dated the 8th January, 194 (copy enclosed) addressed to the Secretary to Government, Agriculture and Rural Development Department, Bombay

Sd/- C. J. Bocarro,
Offg Secretary,
Indian Central Cotton Committ

Encl:
p.

Submitted with ref. to Govt. letters, Nos.5920/39-C and 5920/39/9990-B, dated the 24th Jany., and 21st May,1947 and the proceeding's underlying them.

2. The Indian Central Cotton Committee has intimated that the Central Govt. has sanctioned the extension of the scheme for improvement of Dharwar-American Cotton of the B'bay Karnatak at Gadag for a further period of five years from the 4th April,1947 at a cost of Rs.49,213 to the Committee. The share of the cost of the scheme which this Govt. has agreed to bear is Rs.10,350.

3. The expenditure incurred on the continuance of the scheme during 1947-48 was met by reappropriation from savings under the head "40 Agre." The charge on a/c of the contribution of the Bombay Govt. during 1948-49 may be met from the provision of Rs.6,070 made for the purpose in the current year's budget under the head "40 Agre.J-Grants-in-aid, Contributions, etc.J-2 Research.

4. The draft G.R. overleaf may issue after u.o.r. to F.D.

23.4.48

Secy.

24.4.48

FINANCE DEPARTMENT
Date 27-4-48 A
Serial No.

H.M.(Agri.)after u.o.r.

x with file 5920/39 rec. to F.D. dated 26 April 1948

Gadag.
Extension of,

Govt.of Bombay.
A.& R.D.D.
Resolution No.5920/39.
B.C., 11 May, ~~April~~ 1948.

Read G.R.,R.D.,No.5920/39, dated the 8-4-1942.

Letter from the Dir.of Agre.,No.S.36-K-15/41128, dated the 23rd Decr.,1946.

Govt. Letter to the Secy.,Indian Central Cotton Committee, No.5920/39-C, dated the 24-1-1947.

(Enter)

Memo. Letter from the Secy.,I.C.C.C., No.3730, dated the 27th February,1947.

(Enter with accompts.)

Govt.letter, No.5920/39/5403-C, dated the 5th March,1947, to the Director of Agriculture.

Letter from the Dir.of Agre.,No.P.82/9879, dated the 8th April,1947.

Govt. letter, No.5920/39-C, dated the 30-4-1947, to the Dir.of Agriculture.

Letter from the Director of Agriculture, No.S-36-K-15/10450, dated the 16th April, 1947.

Govt. Letter to the Secy.,I.C.C.C.,No.5920/39/9990-B, dated the 21st May,1947.

(Enter para 2 only.)

Letter from the Secy.,I.C.C.C.,No.2385, dated the 8th January,1948.

(Enter)

Govt. Endt.No.5920/39-B, dated the 15th Jany.,1948, to the Dir.of Agre.

Letter from the Secy.,I.C.C.C.,No.4351, dated the 8th April,1948.

(Enter)

Resolution:- Sanction is accorded to the extension of the scheme for the improvement of Dharwar-American Cotton of the Bombay Karnatak

at.....

of Rs.59,563. The subsidy of Rs.49,213 offered by the Indian Central Cotton Committee should be accepted.

2. Sanction is also accorded to the Govt. of Bombay's contribution of Rs.10,350 towards the non-recurring expenditure on the scheme during the period of its extension.

3. The charge on account of the contribution of the Bombay Govt. towards the non-recurring expenditure on the scheme should be met from the provision made for the purpose in the current year's budget under the head "40 Agriculture-J-Grants-in-aid-Contributions, etc.-J-2-Research.

By order etc.,

24.4.48

Secy. to Govt.

23.4.48

To

The Dir.of Agre.,

The A.G.(thro' F.D.),

The F.D.,

The Secy.,I.C.C.C.

199 Finance Dept (A)

Submitted with reference to this Office notes dt. 6.1.47 and 22.4.47 and the papers underlying them.

2 The orders proposed by the ARDD in its draft G.R. may be agreed to.

27.4.48

30.4.48

1.5.48

1/5

4/5

5/5

5/5

* in R to the ARDD dt 6.5.48

ICULTURE & RURAL
OPMENT DEPARTMENT
No. 5920/39
7 MAY 1948
No. B xxx

with file 592

AFRD

Submitted with reference to M.O.U. dated the 23rd April 1948.

2 As the F.D. agrees the draft SOR within may now come

10/5

SAS

Nipp
10/5/48

6/5/48
10

Extension of,

Government of Bombay,
Agriculture and Rural
Development Department,
Resolution No.5920/39,
Bombay Castle, 11th May 1948,

Read Government Resolution, Revenue Department, No.5920/39, dated the 8th April, 1942.

Letter from the Director of Agriculture, No.S.36-K-15/41128, dated the 23rd December, 1946.

Government Letter to the Secretary, Indian Central Cotton Committee, No.5920/39-C, dated the 24th January, 1947:-

"I am directed to forward copies of the letter from the Director of Agriculture in this Province No.S-36-K-15/41128, dated 23rd December, 1946, and its accompaniments and in the circumstances explained therein, to request that the Director's proposals for the continuance of the scheme for the improvement of Dharwar-American Cotton of the Bombay Karnatak at Gadag for a further period of five years from 4th April, 1947 to 3rd April, 1952 may be submitted for the consideration of the Indian Central Cotton Committee at its next meeting.

"2. The note accompanying the Director's letter gives a brief summary of the work done hitherto under the scheme and the detailed programme for further work during the extension period, now applied for. The total cost of the scheme during the period of extension is estimated at Rs.67,403. In accordance with condition No.30 of the General Conditions applicable to grants by the Indian Central Cotton Committee, full cost of the scheme will have to be borne by the Committee, Government of Bombay bearing as usual the non-recurring expenditure (shed for bullocks and buildings for bullockmen, etc., and recurring expenditure such as office, land rent, etc., as shown in Appendix 'D'). I am accordingly to request that the Indian Central Cotton Committee may be moved to approve the proposed extension of the scheme and agree to bear full cost of the scheme, viz., Rs.57,053, the remaining cost of Rs.10,350 being borne by Government."

Letter from the Secretary, Indian Central Cotton Committee, No.3730, dated the 27th February, 1947:-

"I have the honour to say that the proposals for the extension of the scheme for improvement of Dharwar-American cotton received with your endorsement No.S-36-K-15/41128, dated the 23rd December, 1946, involving a total estimated expenditure of Rs.67,403/- of which the share of the Committee was proposed to be Rs.57,053/- and that of the Provincial Government Rs.10,350/- spread over a period of five years, were considered by my Agricultural Research Sub-Committee at its meetings held on the 27th and 29th January, 1947. The recommendations and observations of the Sub-Committee which were endorsed by the Indian Central Cotton Committee at its meeting held on the 1st February, 1947, are given below:-

"The Sub-Committee noted with satisfaction that as a result of the work done in the past 4 years under this scheme, an improved strain, viz., 9-3 has been evolved, which is superior to the existing variety Gadag No.1 in yield, ginning percentage and spinning performance, and that it is proposed to carry out yield trials with this new strain in the cultivators' fields under the extension scheme. However, the Sub-Committee.....

*Typed as an accompaniment to this Government Resolution.

than is really necessary or can be handled by the kind of staff provided in the extension proposals. After some discussion, the Sub-Committee agreed to the study of interspecific back-cross material from Surat being continued. The Sub-Committee is not in favour of item (4) of the programme which is beyond the scope of the scheme sanctioned for a specific number of years. The Sub-Committee is also of the view that the work included in item(5) of the programme is not likely to lead to any results of practical application. In the light of the above, the Sub-Committee suggests that items 4 and 5 should be excluded from the programme of work and that, if possible, observations on the pests and diseases attacking 9-3 new cotton should be added. In view of the changes suggested in the programme of work, an additional agricultural officer will not really be necessary for the extension scheme. The substitution of a senior agricultural officer for the existing officer of the junior grade will meet the requirements. The replacement of a counter by a kamgar may be agreed to. The non-recurring expenditure as shown in Appendix C should be borne by the Government of Bombay.

Subject to the above observations, the Sub-Committee recommends the extension proposals for sanction."

"In accordance with the above recommendations the total estimated cost of the scheme amounts to Rs.59,563/- of which the share of the Committee will be Rs.46,713/- (details attached) and that of the Bombay Government Rs.12,850/-.

"Subject to the examination and approval by the Standing Finance Sub-Committee at its next meeting of the financial aspect of the proposals, sanction of the Central Government has been applied for and a further communication will follow on receipt of their orders.

Memorandum from the Secretary, Indian Central Cotton Committee, No.3730, dated the 27th February, 1947:-

"Copy forwarded to the Secretary to Government, Reconstruction Department, Bombay Castle, for favour of information and necessary action with reference to his letter No.5920/39-C, dated the 24th January, 1947."

Government letter, No.5920/39/5403-C, dated the 5th March, 1947, to the Director of Agriculture.

Letter from the Director of Agriculture, No.P.82/9879, dated the 8th April, 1947.

Government letter, No.5920/39-C, dated the 30th April, 1947, to the Director of Agriculture.

Letter from the Director of Agriculture, No.S-36-K-15/10450, dated the 16th April, 1947.

Government Letter to the Secretary, Indian Central Cotton Committee, No.5920/39/9990-B, dated the 21st May, 1947:-

"As regards the shares of the Indian Central Cotton Committee and the Government of Bombay, I am to invite your attention to condition No.8 of the general conditions applicable to the grants made by the Indian Central Cotton Committee and to say.....

to be borne by Provincial Government. It is not, therefore, clear why the items of non-recurring expenditure of Rs.2500/- shown in appendix 'C' which are meant for deadstock and furniture should be borne by the Bombay Government as these items do not fall under condition No.8. I am, therefore, to request that the Indian Central Cotton Committee may be moved to agree to bear the non-recurring expenditure amounting to Rs.2,500/- as shown in appendix 'C' (for dead stock and furniture) as had been done in the original scheme."

Letter from the Secretary, Indian Central Cotton Committee, No.2385, dated the 8th January, 1948:-

"In continuation of this office letter No.7797, dated the 30th August, 1947, I have the honour to say that your letter No.5920/39-9990-B, dated the 21st May, 1947, on the above subject, was considered by my Agricultural Research Sub-Committee at its meetings held on the 18th and 20th November, 1947; the observations and recommendations of the Sub-Committee which were endorsed by the Indian Central Cotton Committee at its meeting held on the 22nd November, 1947, are given below for information:-

"The Sub-Committee considered that the original demands of the Bombay Government should be accepted and that the non-recurring expenditure of Rs.2,500/-, on account of deadstock and furniture, should be borne by the Committee."

"Sanction of the Central Government to an additional grant of Rs.2,500/- is being applied for and their orders will be communicated on receipt."

Government Endorsement No.5920/39-B, dated the 15th January, 1948, to the Director of Agriculture.

Letter from the Secretary, Indian Central Cotton Committee, No.4351, dated the 8th April, 1948:-

"I have the honour to invite reference to this office endorsement No.3730, dated the 27th February, 1948, and letter No.2385, dated the 8th January, 1948, and to convey the sanction of the Government of India to the extension of the above scheme at a cost to the Committee of Rs.49,213/- spread over a period of five years, with effect from the 4th April, 1947."

Resolution:- Sanction is accorded to the extension of the scheme for the improvement of Dharwar-American Cotton of the Bombay Karnatak, at Gadag for a further period of five years, with effect from the 4th April, 1947, at a total cost of Rs.59,563. The subsidy of Rs.49,213 offered by the Indian Central Cotton Committee should be accepted.

2. Sanction is also accorded to the Government of Bombay's contribution of Rs.10,350 towards the non-recurring expenditure on the scheme during the period of its extension.

3.....

3. The charge on account of the contribution of the Bombay Government towards the non-recurring expenditure on the scheme should be met from the provision made for the purpose in the current year's budget under the head "40 Agriculture-J-Grants-in-aid-Contributions, etc.-J-2-Research.

By order of the Governor of Bombay,

(D.N. Mahta,)
O/C for Secretary to Government.

G.R. No.5920/39, A.& R.D.D., dated the 11th May, 1948.

To

The Director of Agriculture,

The Accountant General (through the Finance Department),

The Finance Department,

The Secretary, Indian Central Cotton Committee.

No. of 1948.

Copy forwarded for information and guidance to

ISSUED

B.S.S.
12/5.

Accompaniments to Government Resolution, Agriculture and Rural Development Department, No.5920/39, dated the 11th May, 1948.

DETAILS OF THE SCHEME FOR IMPROVEMENT OF DHARWAR-AMERICAN COTTON.

INDIAN CENTRAL COTTON COMMITTEE.			BOMBAY GOVERNMENT.	
(i) Establishment.	...	25,018	Non-recurring Expenditure as in appendix C.	2,500
(ii) Contingencies.	...	25,695	Provincial Government's share as in appendix D.	10,350
		50,713		12,850
Deduct sale proceeds for five years from 16 acres at Rs.50/- per acre per year.		-4,000		
		46,713	Total. 46,713 + 12,850 =	59,563

Pay of the establishment and allowances and honoraria.

Major & Minor head.	detailed scale of pay.	1947-48.	1948-49.	1949-50.	1950-51.	1951-52.	Total.	Remarks.
1. Pay of Agricultural Officer, Senior.	180-10-270	2160 +120*	2280	2400	2520	2640	12,000 +120	*Temporary additional pay.
2. Kamgar.	30-35-5/2-60	360 + 60*	420	420	480	480	2,160 +60*	
3. Peon.	15-1-20	180 + 60*	192	204	216	228	1,020 +60*	
4. Leave salary.		320	320	320	320	320	1,600	
		3260	3212	3344	3536	3668	17,020	
II. Allowances & Honoraria.								
1. Travelling allowance.		100	100	100	100	100	500	
2. Dearness allowance at 17-1/2% or Rs.22/- or Rs.20/-		918	930	934	982	996	4760	
		1018	1030	1034	1082	1096	5260	
III. Provident Fund Contribution. Indian Central Cotton Committee								
1. Arrears of contribution.		728					728	
2. New contribution.		360	381	402	423	444	2010	
		1088	381	402	423	444	2738	
GRAND TOTAL		5366	4623	4780	5041	5208	25,018	

Indian Central Cotton
Bombay.

No. Res/S-36-L /3383 of 1949. Poona, 28th May, 1949.

Subject :- Improvement of Dharwar cotton in Kannad districts - Budget for 1949-50 - Additional grant for - -

Sir,

With reference to your letter No. 3305, dated the 24th January, 1949, on the above subject, I am to state that the Cotton Botanist, B.P., Surat, has proposed an additional grant of Rs 6474-9-6 for the full extension period of the scheme for the improvement of Dharwar cotton in Kannad districts, on account of revision of pay scales, dearness allowance and travelling allowance, for a period of five years from 1947-48 to 1951-52. A statement received from the Cotton Breeder, Dharwar, is attached herewith.

I am to request you to accord necessary sanction to the grant of Rs 6474-9-6, which will be required in addition to the sanctioned grant of Rs 49,213/-, as the expenditure on this scheme is to be borne fully by the Indian Central Cotton Committee, Bombay.

A list of the books proposed to be purchased is also attached herewith.

Favour of early orders in the matter is requested.

Yours faithfully,

Dy. Director of Agriculture
(R. & E.)
for Director of Agriculture.

Through

The Secretary to Government,
Agriculture and Rural Development Department,
Bombay (with compliments).

AGRICULTURE & RURAL DEVELOPMENT DEPARTMENT
File No. 1519 5920/39
Date 30 MAY 194 k/28
Serial No. B 27228

No 5920/39/27228-B
A&RDD
B.C., 6th June 49

Forwarded to the Secy., I.C.C.C., B'bay for

Secy. action.

By order etc.,

Where is the ? 96
should tyled [illegible] [illegible]
[illegible] [illegible] delay

A.S. to Govt., A&RDD

V. urgency

Ry

Kan file

Pl issue FC & return

4/6/49

STATEMENT SHOWING THE POSITION OF GRANTS SANCTIONED AND REQUIRED FOR THE DHARWAR-AMERICAN COTTON IMPROVEMENT SCHEME, GADAG FOR 5 YEARS.

Articulars	1947-48			1948-49			1949-50			1950-51			1951-52			Upto 3-4-52.		
	Original sanctioned amount	Amount spent	Savings or deficit	Original sanctioned amount	Amount spent	Savings or deficit	Original sanctioned amount	Amount to be spent	Savings or deficit	Original sanctioned amount	Amount to be spent	Savings or deficit	Original sanctioned amount	Amount to be spent	Savings or deficit	Original	Amount to be spent	Savings or deficit.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
I. Establishment.																		
1. Pay of Agril. Officer (Sr.) (210-10-300).	2280	1913-7-0	+366-9	2280	3175-14	-895-14	2400	2750	-350	2520	2870	-350	2640	2990	-350	-	25	-25
2. Pay of Kamgar. (55-3-85)	420	478-7	+181-9	420	1381-2-769-2		420	749	-329	480	765	-285	480	801	-321	-	7	-7
3. Pay of Peon (30-1/2-35).	240			192			204	364	-160	216	372	-156	228	376	-148	-	4	-4
4. Leave salary.	320	-	+320	320	-	+320	320	155	+165	320	165	+155	320	165	+155	-	-	-
5. C.P.F. contribution.	1088	-	+1088	381	1203-8	-822-8	402	291	+111	423	304	+119	444	317	+127	-	-	-
Total....	4348	2391-14	+1956-2	3593	5760-8	-2167-8	3746	4309	-563	3959	4476	-517	4112	4649	-537	-	36	-36
II. Allowances & Honoraria.																		
1. Travelling Allowance of Estt.	100	55-14	+ 44-12	100	282-3	- 182-3	100	150	-50	100	150	- 50	100	150	- 50	-	-	-
2. Dearness Allowance to Estt.	918	886-11	+31- 5	930	1653-10	-723-10	934	1680	-746	982	1680	-698	996	1680	-684	-	14	-14
3. Bonus to Estt.	-	90- 0	-90- 0	-	53-11	- 53-11	-	-	-	[illegible]	1030	-748	1096	1830	-734	-	14	-14
Total....	1018	1031-15	-13-15	1030	1989- 8	-959- 8	1034	1830	-796									
III. Contingencies.																		
1. Office expenses and Miscellaneous.	1000	1000	-	1000	1000	-	1000	1000	-	1000	1000	-	1000	1000	-	-	10	-10
2. Cultivation charges.	1500	1500	-	1500	1600	-100	1500	1500	-	1500	1500	-	1500	1500	-	-	20	-20
3. Selfing charges.	500	499-3	+ 0-13	500	499-2-9	+0-13-3	500	500	-	500	500	-	500	500	-	-	-	-
4. Pay & D.A. of M.L. Man. (Sr.) (30-1/2-50)	480	468-9	+ 11- 7	492	837-0-0	-345 -0	504	812	-308	516	792	-276	528	804	-276	-	7	-7
5. Pay & D.A. of M.L. man. (Jr) Rs. 30/-	420	-	+420- 0	420	124-3-0	+295-13	420	800	-380	420	780	-360	420	780	-360	-	7	-7
6. Pay & D.A. of watchman Rs. 30/-	420	147-0	+273- 0	420	692-11	-272-11	420	800	-380	420	780	-360	420	780	-360	-	7	-7
7. Upkeep of live-stock.	720	290-0	+430-0	720	720-00	-	720	720	-	720	720	-	720	720	-	-	20	-20
8. Service postage & telegrams.	75	75-0	-	75	75- 0	-	75	75	-	75	75	-	75	75	-	-	1	-1
Total...	5115	3979-12	+1135-4	5127	5548-0-9	-421-0-9	5139	6207	-1068	5161	6147	-986	5163	6159	-996	-	72	-72
Non Recurring Grand Total.....	-	-	-	2500	2499-3-0	+ 0-13-0	-	-	-	-	-	-	-	-	-	-	-	-
							9919	12346	-2427	10192	12453	-2261	10371	12638	-2267	-	122	-122
Grand Total.....	10481	7403- 9	+3077-7	12250	15797-15-9	-3547-3-9												
Deduct Estimated receipts.	800	650-15-3	-149-0-9	800	2021-4- 0	+1221-4-0	800	800	-	800	800	-	800	800	-	-	-	-
							9119	11546	-2427	9392	11653	-2261	9571	11838	-2267	-	122	-122
Grand Total.....	9681	6752- 9-9	+2928-6-3	11450	13775-15-9	-2325-15-9												

Net Defecit.....-6474-9-6 only.

AN ABSTRACT OF THE BUDGET ESTIMATES FOR FIVE YEARS PERIOD.

Year.	Amount sanctioned	Amount spent and to be spent.	Savings or defecits.	Remarks.
1	2	3	4	5
1947-48	9,681- 0 - 0	6,752- 9 - 9	+2928-6-3	
1948-49	11,450- 0 - 0	13,775-15 - 9	-2325-15-9	
1949-50	9,119- 0 - 0	11,546- 0 - 0	-2427- 0-0	
1950-51	9,392- 0 - 0	11,653- 0 - 0	-2261- 0-0	
1951-52	9,571- 0 - 0	11,838- 0 - 0	-2267- 0-0	
Upto 3-4-1952.	- -	122- 0 - 0	-122 - 0-0	
Total.....	49,213- 0 - 0	55,687- 9 - 6	-6474- 9-6	

List of books to be purchased for the Dharwar American Cotton Improvement Scheme, Gadag.

1. Genetics in relation to Agriculture- Babcock & Clausen.
2. Recent advances in Genetics - Samsen & Phillips.
3. Recent advances in Plant Breeding - Lake.
4. Statistical Methods for Research Workers - R.A. Fisher.
5. Measurement of Linkage in Heridity - Mather.
6. The evolution of Gossypeum - J.B. Hachisen, R.A. Silow & S.G. stephens.

SD/- x x x
Cotton Breeder., S.M.C.,
DHARWAR.

To

The Secretary,
Indian Central Cotton Committee,
Bombay.

No. Res/S-36-K/4666 of 1949. Poona, 29 June, 1949.

Subject :- Progress Reports of Research Schemes for 1948-49.

Sir,

With reference to your letter No. 5205, dated the 5th May, 1949, on the above subject, I forward herewith the progress reports of the Research Schemes for the year 1948-49 as under :-

(1) Dharwar-American Cotton Improvement Scheme at Gadag (Bombay - Karnatak),

(2) New Khandesh Cotton Breeding Scheme,

(3) Scheme for Improvement of Wagad Cotton at Viramgam and Bavla,

(4) Scheme for Interspecific Hybridization in Cottons at Surat.

Yours faithfully,

Dy. Director of Agriculture
(R. & E.)
for Director of Agriculture.

AGRICULTURE & RURAL DEVELOPMENT DEPARTMENT
File No. 5920/39
Date 30 JUN 1949
Serial No. B 31559

The Secretary to Government,
Agriculture and Rural Development Department, Bombay
(with compliments) (with a spare copy of each report).

No. 5920/39/31559-B
Agriculture and Forests Department
Bombay Castle, 5th July, 1949.

Forwarded to the Secretary, Indian Central Cotton Committee.

By order of the Governor of Bombay,

Assistant Secretary to the Government of Bombay, Agriculture and Forests Department.

(Bombay Karnatak)

Seventh Progress Report - 1948-49:-

A. Preliminary data for the original Scheme:-

(a)Date of sanction of the original Scheme. 8-4-1942

(b)Date of commencement of the Scheme. ..... 4-4-1942.

(c)Period for which the Scheme was originally sanctioned. 5 years

(d)Cotton acreage to which the results of the Scheme would be applicable. ... ...2,75,000 acres.

(e)Amount sanctioned for the first five years i.e., from 4-4-1942 - 3-4-1947 :-

(i)By the I.C.C.C.Bombay. Rs.15390/-

Deduct for receipts at Rs.300/- per acre per year to be taken by the I.C.C.C.Bombay..... --Rs. 1500/-

Total:-Rs.13890/-

(ii)By the Bombay Government. ... ... Rs. 1250/-

(f)Total actual expenditure incurred during the first five years:-

(i)From the grants of the I.C.C.C.Bombay .....Rs.19152-14-11.

(ii)From the Grants of the Bombay Government.. Rs. 2175--0--0.

Total expenditure incurred Rs.21327-14-11

(g)Receipts credited to the I.C.C.C.Bombay during the first five years. Rs.2291-4-6

(h)Date of termination of the Scheme. ..... 3-4-1947.

Preliminary data for the extension period:-

(a')Date of sanction of the extended Scheme. .... 11-5-1948.

(b')Date of commencement of the extended Scheme. .... 4-4-1947.

(c')Period for which the Scheme has been extended... 5 years.

(d')Amount sanctioned for the extension period:-

(1)By the I.C.C.C.Bombay. Rs.46,713/-

(i)Establishment Rs.25018/-

(ii)Contingencies..... Rs.25695/-

Total:-Rs.50713/-

Deduct sale proceeds for five years from ~~26~~ 16 acres at Rs.50/- per acre per year. --Rs.4000/-

Rs.46,713/-

(2)By the Bombay Government. .... Rs. 12850/-

.....2.

(i)From the grants of the I.C.C.C.Bombay:- 1947-48 ; 1948-49
Rs.7403-9-0 Rs.14436-8-9

(ii)From the grants of the Bombay Govt. Rs. 824-0-0 Rs. 849-0-0

(iii)Receipts credited to I.C.C.C.Bombay.Rs.650-15-3 Rs.2021-4-0

B. Approved Programme of work for 1948-49:-

(1)Comparison of the synthetic strains9-3(Laxmi) and 9766,obtained from the cross (Gadag-1 x Co2) with Gadag-1 as control.

(2)Comparison of Sub-selections from 9-3 with Gadag-1 and 9-3 as controls.

(3)Comparison of and selections from the interspecific material supplied from Surat.

(4)Study of crosses involving G. Tomentosum, from Surat

(5)Study of crosses, backcrosses and complex crosses.

(6)Assessment of response of 9-3(Laxmi) to graded doses of -- nitrogen.

C. Object of the extended Scheme:-

(1)Replacing Gadag-1 with 9-3 (Laxmi)

(2)Isolation of strains superior to 9-3 in all the requisite characters.

(3)Increasing per acre kapas yield of 9-3 by application of nitrogenous manures.

(4)Observation of pests and diseases to which 9-3 is susceptible

D. Brief resume of work done during ~~1948-49~~:- the period under report.

At present the standard, improved variety Gadag-1 selected from the local, acclimatised Dharwar-American Cotton variety, and superior to the latter in several respects, is under distribution. To enhance ginning outturn of Gadag-1 and to get additional resistance to red-leaf--blight, Gadag-1 was crossed with Co2. Out of the several families isolated from this cross, Seg.9-3 is found to combine all the requisite field and trade characters. During the past seven years, 9-3 is being compared with Gadag-1, both on the breeder's plot at Gadag and on the cultivators' fields, and it has shown consistent superiority over Gadag-1. On an average, 9-3 records an increase over Gadag-1 by 24.6% in kapas yield, by 32.2% in lint yield, by 3.2% in ginning outturn, by 15.8% in staple length and by 23.5% in spinning value. Comparative Mill Tests of both these varieties taken at the Century Mills, Bombay, and at the

in favour of strain 9-3.

For further improvement of 9-3, selective hybridisation has been taken up involving reputed, superior varieties like Co2, Co3, Co4 Perso-American, M-4, Kampala etc., as parents in crosses.

Response of 9-3 to nitrogenous manures also is under study.

E. Report of the work done during 1948-49:-

(i) Season:- This is the seventh year of this Scheme. Total -- rainfall received ~~xxx~~ during the year amounted to 30.82" inches it being nearly 8.63 inches above the normal for this tract. Well spread and soaking showers received in September helped preparatory tillage and timely sowing. Germination was good. Contineous showers in October, when the crop was young, gave rise to the incidence of " black arm " and " red-leaf-blight". Wet weather in November induced leafy growth, with the result that flowering, boll formation and harvest was delayed by about a month. Part of the second picking and the whole of the third picking was caught in the rain. Hence 30% of this season's produce was " rain-touched". On the whole, 1948-49 was abnormal due to the heavier and ill-distributed rainfall. Attack of Jassids, aphis, leaf-roller, red-leaf-blight and black-arm was noticed on all the hirsutum varieties to more or less extent.

(ii) Comparison of 9-3 (Laxmi) and Gadag-1:-

(a) Comparison of 9-3 and 9766 obtained from the cross (Gadag-1 x Co2) and Gadag-1, the present, standard, improved variety of this tract was continued, in a large scale, replicated field trial. ~~Data obtained is~~ The results are summarised below :-

Particulars.	Varieties. 9-3 (Laxmi)	9766	Gadag-1
Kapas yield per acre in lbs.	541	522	474
Lint yield ----Do----	201	193	157
Ginning %	37.0	37.1	33.4
Earliness %	70.3	62.7	59.5
Staple length in M.M.	23.5	22.7	21.5

Observed F= 2.2; Theo F = 3.98 at 5% level.

performance of 9-3 and Gadag-1 falls in line with the past six year's data. The trial will be repeated.

(b) Small Scale bulk trial:- To maintain the purity of the sub--cultures 9-3-1, 9-3-2 and 9-3-3, fourteen plants selected at randum from each of them were compared in replicated plant progeny rows with 9-3 (Laxmi) and Gadag-1 as controls. In accord with the past year's data, significant differences in yield amoungst the 9-3 progenie-ies were absent. However bulks of the best yielding progenies were compared with Gadag-1 and Laxmi. Resultant data ~~is~~ are presented below :-

Cultures.:-	Laxmi ;	9-3-2;	9-3-1;	9766 ;	9-3-3;	Gadag-1
Kapas yield per acre in lbs...	592	546	521	500	482	440
Ginning%	37.0	35.9	37.7	37.1	36.2	33.4
Staple length in m.m.	23.5	23.0	24.7	22.7	23.0	21.5
Earliness%	87.7	85.2	89.8	85.0	83.7	82.0

F obs = 19.2; Theo F 2.6; Cretical difference per acre =34.1.

The trial with 9-3-1 and 9-3-2 bulked progenies will be repeated with Gadag-1 and Laxmi as controls.

(c) Village ~~trials~~ trials:- Strain 9-3 (Laxmi) was compared with Gadag-1 on the cultivators' plots, at two places, in Gadag taluka. Strain 9-3 has shown significant superiority in yield over Gadag-1, in both the trials. This is in accord with the previous trials. Average data of both the experiments ~~is~~ are given below :-

Details	Strains. Laxmi (9-3)	Gadag-1
Kapas yield per acre lbs.	551	508
Ginning percentage.	37.5	32.0
Staple length in M.M.	22.5	20.6

The trial will be repeated.

(d) Technological Analysis:- As usual, lint samples of Gadag-1 and 9-3 from the produce of 1947-48 season were sent to the Matunga -- Laboratory for fibre analysis and spinning tests. Relevent data are tabulated below :-

Particulars. 9-3 (Laxmi) ~~Gadag-1~~ :

see page 5.

Ball's sorter.	0.99"	...	0.82"
Baer's sorter.	1.01"	....	0.83"
Mean fibre weight per inch...	0.125	...	0.148
H.S.W.Cs.	40s	....	34s

Nappiness:-The yarns spun from both the samples are slightly neppy.

(e) Results of Mill Tests:- Full pressed lint bales of 9-3 and Gadag-1, from the 1947-48 crop, produced on (1) the Government Farm at Gadag (2) Cultivator's field at Gadag and (3) mixed produce from the village trials, were sent to the " Century Mills", Bombay for conducting comparative Mill Tests. Small samples from the three lots were sent by the Century Mill to the Technological Laboratory, Matunga, where parallel spinning tests were conducted. Relevent data from the " Grader's " and spinning reports are given in appendix No.1 and No.2. From these, it is clear that the strain 9-3 (Laxmi) is decidedly superior to Gadag-1 in all the requisite commercial characters. A Scheme for replacing Gadag-1 with Laxmi (9-3) has already been submitted.

(iii) Study of interspecific material from Surat:-

In addition to the three types, retained as promising from the previous interspecific material, four new types were received from Surat. Thus, in this season seven interspecific bulks were compared for yield and other characters with Gadag-1 and 9-3 as controls. Results obtained are tabulated below :-

Type	Yield per acre in lbs: kapas	Yield per acre in lbs: lint	Ginning%	Staple length M.M.	Earliness%	Incidence of red-leaf-blight.
BC68-5-4-1-1-1-11	349	138	39.4	24.0	75.0	1.0
BC68-5-4-1-1-1-11 (Surat)	438	153	39.4	23.0	75.7	1.0
BC134 x C.W)F_1 xC.W.-1-3-7	483	165	37.7	23.7	72.5	0.5
(BC134 x C.W) 3-3-bulk:-8-1-1-F8	278	108	39.0	24.0	72.3	0.0
BC68-7-9-1-5-1-2-4 F_{11})	336	137	40.8	23.7	71.7	0.5
(BC134 X C.W.)3-7 Bulk 8-1-1-8	322	132	40.6	23.3	72.3	0.5
(Co2 x Meade) Bulk 3-1-3-3-1-8	354	129	36.2	28.0	67.5	0.5
9-3.	659	244	37.0	23.5	90.5	0.0
Gadag-1	391	130	33.4	21.5	75.3	1.5

Observed F= 9.9; Theo F=2.18 at 5% and 3.07 at 1%

Critical difference 102.4 lbs kapas per acre.

None of the interspecific types even approaches 9-3 in kapas and lint yield per acre and earliness, although they are as good as Gadag-1 in these respects. But most of them show a good combination of staple length and ginning outturn, to exploit which they have been crossed with 9-3. Selected bulks from these seven types will be compared with 9-3 and Gadag-1 next year.

(iv) Study of Tomentosum material:- Fourteen derivatives from F2 of B-3 and seven from F3 of B-2 of (Co2 x Tomentosum) x Co2 BCs and seven from reduced tetraploids from (Co2 x 1027)F1 doubled x G. armorianum were compared with Gadag-1, 9-3 and Vilayati (Dharwar--American Local) for yield and resistance to insect pests and -- diseases. Results are tabulated below:-

Types.	Yield per acre in lbs. Kapas	Yield per acre in lbs. Lint	Ginning%	Staple length in M.M.	Earliness %	Incidence of jassids	Incidence of R.L.B.
1	2	3	4	5	6	7	8
(Co2 x Tomentosum)Co2							
F_2 of B-3	273	101	36.9	21.9	66.5	0.36	0.0
F3 of B-2	230	91	39.7	19.5	64.7	0.35	0.0
Reduced Tetraploids	443	157	34.9	21.4	68.0	1.2	0.0
9-3.	584	214	37.0	23.5	93.6	0.0	0.3
Gadag-1	343	115	33.4	21.5	81.6	0.75	1.2
Vilayati(Dharwar - American Local)	392	126	32.0	18.2	92.9	1.12	1.5

Obs.F - 11.3 Theo F=2.29; Critical difference =126 lbs kapas.

Bulks of the promising selections will be studied next year.

(V) Study of fresh hybrid material:-

(a) Study of F5:- As stated in last year's progress report, selected individuals from two cultures from (Perso-American x G-1), four cultures from (M-4 x G-1); nine cultures from (Kampala x G-1), seven cultures from (Jinjiya x G-1) were compared for yield and other requisite characters with 9-3 and Gadag-1 as controls. Cultures 15 from (M-4 x Gadag-1) cross is giving very good allround combination Culture 11 from ~~the~~ (Perso-American X G-1) and culture Nos 6 &7

with 9-3 in kapas yield. In ginning outturn they vary from 33.5% to 35.0% and in staple length from 22.4 M.M. to 24.9 M.M. as against 37.0% and 33.4% ginning outturn and 23.5 M.M. and 21.5 M.M. staple length of 9-3 and Gadag-1 respectively. Best of the individuals from these culture will be studied further.

(b) Study of B-4s:- Seven cultures from (Perso-American x G-1) G-1; three from (M-4 x Gadag-1) Gadag-1 and six from (4F98 x G-1)G-1 were compared with 9-3 and Gadag-1 in replicated progeny rows. Some of these cultures are giving very good response to selection for yield. Cultures 9, 11 and 12 from (Perso-American X G-1)G-1 , 4 & 6 from (M-4 X G-1)G-1 and cultures, 1,3,4 and 12 from (4F 98 X G-1)G-1 are equal in yield to 9-3. In ginning outturn they vary from 34.2 to 36.5; and in staple length from 23.5 to 24.2 M.M. as compared to 37.0% ginning outturn and 23.5 M.M. Staple length of 9-3. Selected individuals from these cultures will be tested in the next year.

(c) Study of C 4s:- Nine cultures from (Perso-American X G-1) 4411-3, four from (M-4 X G-1)4411-3 and three from (S.S. x Gadag-1) 4411-3 were compared with 9-3 and Gadag-1. Material from (Perso--American X Gadag-1)4411-3 shows practically complete freedom from red-leaf-blight and has better all-round combination of characters. Cultures 6,7,14 and 42 from this cross and cultures 1 & 16 from (S.S. X G-1) 4411-3 are at par with 9-3 in yield. They give a range in ginning outturn from 33.8% to 35.6% and in staple length from 22.6 to 25 M.M. as compared to 37% ginning and 23.5 M.M. staple length of 9-3. Selected material from these cultures will be carried further.

(d) Study of F_6:- Four cultures from the cross (9966 X Kampala), two from (9766 x Jinjaya), three from (G-1 X Co2); two from (G-1 x Co3); and two from (G-1 X Co_4) were compared for yield and other characters with 9-3 and Gadag-1 as controls. Some of these cultures, and especially all the cultures from (G-1 X Co2) cross show higher yielding capacity and better resistance to red-leaf-blight as compared to these of 9-3. In staple length, the cultures range from 22 to 24.2 M.M. and in ginning outturn from 33% to 36% as against 23.5 M.M., staple length and 37.0% ginning of 9-3. Selected individuals from all these cultures will be carried on.

three from (4411 x Kampala)4411 and three from (G-1 x Co4) were -- compared with 9-3 and Gadag-1. Material from the back-cross(G-1 x Co4)G-1 is not hopeful and hence it will be rejected. Material from the remaining two back-crosses continues to compare well with 9-3. Selected material from the back-crosses involving 4411, 9766 and Kampala will be studied further.

Bulk trial of all the fore-going crosses, back-crosses and complex crosses in different generations was taken with G-1 and 9-3 as checks. Though none of the bulks have yielded higher than 9-3, those from (9766 x Kampala); (9766 X Jinjiya); (S.S. x G-1) 4411-3, and (Perso-American X G-1)4411-3 have yielded better than Gadag-1 and equal to 9-3. Some of the material is equal to 9-3 in ginning % and longer in staple by about 0.5 M.M. This trial with bulked selections will be continued. From the comparative study of the selected hybrid materials it became clear that some of the -- cultures are decidedly better than 9-3 (Laxmi) in yield, resistance to red-leaf-blight and staple length. But the best of them would be just equal to Laxmi in ginning outturn. To get an all-round -- superiority over Laxmi, crosses made between Laxmi and the interspecific material from Surat will give a better chance.

(V) Manurial trial:-

This trial was layed out to assess the response of 9-3 to different doses of nitrogen applied in the form of groundnut cake and sulphate of Ammonia. This is the second year of the trial. Details of it's layout were given in the last year's progress report. This year's data also are in accord with those of the last year, indicating that out of the two manures , Ammonium Sulphate; of the three levels of nitrogen, 40 lbs N. per acre; and of the three periods of applicati -on , application on the date of sowing have given the best results. The trial will be repeated.

(VII) Comparative resistance to " Black-Arm":-

Four black-arm resistant types viz., Bar 7-1; Bar 7-8 Bar 7-6 and Stone-Ville-20, received from the Plant Pathologist, to Govt.B.P.,Poona , were kept under observation to study their compara- -tive capacities to resist black-arm disease. All the " Bar " type were found to be susceptible, though none of them succumbed. which Sone-

be hybridised with Stone-Ville.

F. Proposed Programme for 1949-50:- As per approved programme for 1948-49.

BVD.

Cotton Breeder, S.M.C. Dharwar.

---:0:---

Countersigned.

COTTON BOTANIST.
B. P. SURAT.

Appendix No.1.

Grader's reports supplied by the " Century Mills" Bombay and the Matunga Laboratory on lint samples of Gadag-1 and Laxmi (9-3) produced on the Govt. Farm Gadag and the cultivator's fields in 1947-48:-

Place of production	Data supplied by the Century Mills Bombay				Data supplied by the Matunga Laboratory Bombay				Remarks.
	Class	Feel	Staple length inches	Valuation per candy of lint	Class	Feel	Staple length inches	Valuation per candy of lint	
1	2	3	4	5	6	7	8	9	10
Gadag-1.									
Govt. Farm Gadag.	Fine	Very silky	11/16 to 13/16	831	Super-fine.	silky	27/32	740/-	
Cultivator's field at Gadag.	Fully good) to fine.	fairly silky	3/4 to 7/8	841	--Do--	--Do--	13/16	650/-	
Village trials ~~(Mixture)~~	fine	Fairly silky	13/16 to 14/16	841	--Do--	--Do--	13/16	670/-	
Laxmi.									
Govt. Farm. Gadag.	Fine.	Very fine silky	3/4 to 15/16	856	--Do--	--Do--	7/8	825/-	
Cultivator's field Gadag.	-Do-	silky	13/16 to 15/16	891	-Do-	--Do--	27/32	775/-	
Village trial ~~(Mixture.~~	--Do--	-Do-	7/8 to 1)	981	--Do--	--Do--	27/32	720/-	

Average valuation of Gadag-1 ..... 837/- .....

------Do------ of Laxmi. ..... 909/- .....

Appendix No.2.

Results of Mill Tests on Gadag-1 and Laxmi (9-3) produced on the Govt. Farm Gadag, and the cultivator's fields during 1947-48 -- conducted by the Century Mills, Bombay and the Matunga Laboratory, Bombay:-

S.No.	Place of production	Varieties	Blow room loss%	Card loss%	Counts actual	Lea strength lbs.	Turn per inch.	Testing room R.H.	Strength lbs corrected to nominal counts 20s & R.H. 70%	Staple length inches Balls sorter	Staple length inches Baer sorter	Fibre weight per inch
1	2	3	4	5	6	7	8	9	10	11	12	13
					Century Mills Tests:-							
1	Govt. Farm Gadag.	Gadag-1	9.0	4.4	20.1	80.0	18.6	76	78			
	---Do---	Laxmi(9-3)	6.5	4.4	20.1	84.0	18.6	76	82			
2	Cultivaror's field at Gadag.	Gadag-1	7.0	4.5	19.8	84.0	18.6	76	80			
	---Do---	Laxmi(9-3)	6.0	4.4	19.9	84.0	18.6	76	81			
3	Village trials ~~(Mixture.)~~	Gadag-1	9.0	4.5	19.9	88.0	18.6	76	85			
	---Do---	Laxmi.	8.0	4.4	20.1	95.0	18.6	72	95			
Mean :-		Gadag-1	8.3	4.46	19.9	84.0	18.6	76	81			
		Laxmi(9-3)	6.8	4.40	20.0	88.0	18.6	75	86			
					Results of tests conducted by the Matunga Laboratory, Bombay:-							
1	Govt. Farm Gavag.	Gadag-1	6.7	7.5	20.4	85.9	18.0	66	90	0.87	0.85	0.159
	----Do----	Laxmi(9-3)	7.5	11.0	19.7	102.1	18.0	66	102	0.93	0.94	0.134
2	Cultivator's field at Gadag.	Gadag-1	9.4	8.0	20.0	93.7	18.0	66	96	0.85	0.87	0.153
	----Do----	Laxmi(9-3)	7.0	9.3	20.4	102.4	18.0	66	107	0.93	0.96	0.135
3	Village trials ~~(Mixture)~~	Gadag-1	6.7	6.9	20.0	86.0	18.0	66	88	0.80	0.78	0.151
	----Do----	Laxmi(9-3)	6.1	10.4	20.1	102.3	18.0	66	105	0.91	0.93	0.107
Mean :-		Gadag-1	7.6	7.5	20.1	88.5	18.0	66	91.3	0.84	0.83	0.154
		Laxmi(9-3)	6.9	10.2	20.1	102.2	18.0	66	104.6	0.92	0.94	0.125

Note:- Mill figures indicate card loss on Cotton.

----:0:---

BVD.

Form. E.

(1)Methods of layout :-Randomised blocks with 6 replications

(2)Year of trial:- 1948-49.

(3)Locations where field tests were conducted :-Gadag.

S.No.	Type under test (including controls)	No. of years in this tests	Period of picking	Average yields per acre in lbs. Previous year	Average yields per acre in lbs. Last year	Average yields per acre in lbs. To date 1948-49	% of increase over - control	Statistical significance of the - increase	v.lint yield - in lbs per - acre.	v.staple length 47-48	v. ginning %	Max. warp counts	Average acre cost value Kapas.	Seasonal peculiarities is any.	Susceptibility or resistance to Major - pests & diseases	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	9-3	Three years	11th March 1949 to 11th April 1949.	588	470	541	14.2	F.obs =2.2 F.Theo =3.98 at 5% level.	201	0.99"	37.0	40	Rs.134/-	Cotton Season was characterised by heavy precipitition during the vegetative phase, with the result that the crop became late and about 30% of the crop was badly caught in rain Red-Leaf-blight was not so severe as last year.	9-3 resists to "R.L.B." to a great extent.	B.6-14-8 per maund of 28 lb kapas in the Gadag Market.
E Gadag-1				542	358	474	0.0		157	0.83"	38.4	34	Rs.99/-	Very much less resistant to ".R.L.B." as compared to 9-3.	Low yields have been reported from the Districts.	Rs.5-13-7 per 28 lbs kapas in Gadag - Market.